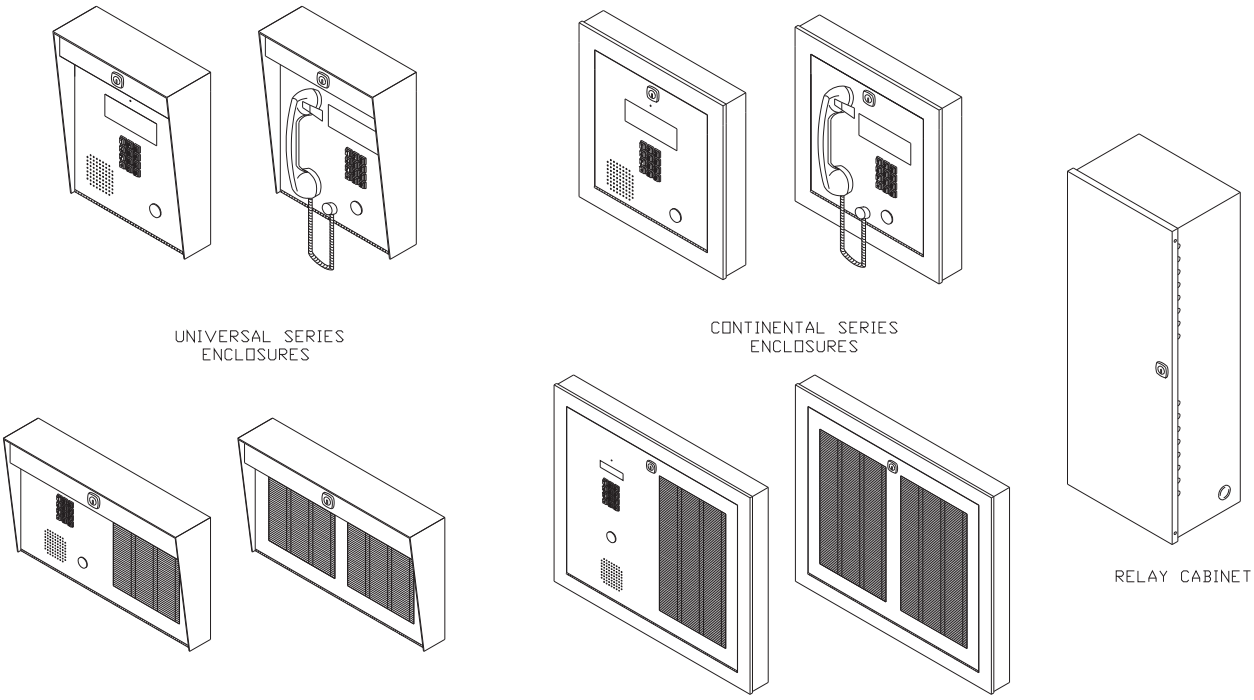
MIRCOM ®

9500 Series

NSL No Subscriber Line Access Systems

Scrolling & Non-Scrolling Directory

INSTALLATION, PROGRAMMING, and TROUBLESHOOTING MANUAL



☞NOTICE
All information, documentation, and specifications contained in this manual are subject to change without prior notice by the manufacturer.

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IMPORTANT NOTICE

Notice for all 9500 series Telephone Entry Systems Sold in Canada:

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunication company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradations of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alteration made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the **Earth Ground** connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This is necessary both for proper operation and for protection.

CAUTION: *Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.*

NOTICE:
The **LOAD NUMBER** (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the sum of the load numbers of all devices does not exceed **100**.

INDUSTRY CANADA (Formerly D.O.C.) Registration Number: **1156 6200 A**

Notice for all 9500 series Telephone Entry Systems Sold in the U.S.A.:

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING:

Changes or Modifications not expressly approved by MIRCOM TECHNOLOGIES LTD. could void the users' authority to operate the equipment.
F.C.C. Registration Number: **1M8CAN-21269-DT-E**

Notice for all 9500 series Telephone Entry System Sold Internationally:

Conformity to the local Tel. Co. standards must be reviewed before installation of 9500 Series Telephone Access Systems.

SYSTEM FEATURES

SCROLLING DIRECTORY FEATURES:

✓ SCROLLING DIRECTORY
✓ Programmable using the lobby panel's keypad or IBM® PC
✓ 15 Characters Resident Name length.
✓ Capacity for up to 1000 Suites or Telephone Lines.
✓ 1000 reprogrammable KEYLESS ENTRY codes for Residents plus five (5) spares for use of building management.
✓ 4 lines by 20 characters VFD (Vacuum Fluorescent Display)

NON-SCROLLING DIRECTORY FEATURES:

✓ Capacity for up to 1000 Suites or Telephone Lines.
✓ Programmable using the lobby panel's keypad
✓ 1000 reprogrammable KEYLESS ENTRY codes for Residents plus five (5) spares for use of building management.
✓SUPERTWIST 2 lines by 16 characters backlit extended temperature LCD display.

COMMON FEATURES FOR BOTH SCROLLING AND NON-SCROLLING TEL. ACCESS SYSTEMS:

✓ No SUBSCRIBER PHONE LINE FEE is required.
✓ User programmable MASTER CODE for security and programming access.
✓ Capability of rotary "PULSE" or touch tone "DTMF" dialling.
✓ VARIABLE RESIDENT CODE LENGTH, 1, 2, 3 or 4 digit.
✓ SINGLE or MULTIPLE ENTRANCES capability.
✓ DOOR OVERRIDE connection for fire alarm. Doors will pulse open during emergency.
✓ Built-in POST OFFICE LOCK micro switch.
✓ Connection for "LOCK-BACK" door contact to lock door as soon as it is open to prevent "tailgating" through.
✓ MAIN ENTRANCE ACTIVE RELAY CONTACTS for use of camera activation.
✓ AUXILIARY RELAY CONTACTS for use of auxiliary entrance or garage door.
✓ User Definable Start Number for auto-programming the Residents' access codes.
✓ Programmable "DOOR OPEN" timer (99 seconds max.).
✓ Programmable "ON LINE or CONVERSATION TIME" timer (99 seconds max.).
✓ Adjustable number of RING CYCLES.
✓ Built-in CALL WAITING feature.
✓ MUSIC-ON-HOLD input for music source (mono) such as radio or tape deck.
✓NONVOLATILE MEMORY (EEPROM), retains programmed information during power failure.
✓ GUARD or CONCIERGE telephone connection. Use for calling the Residents or Suites.
✓ DEDICATED TELEPHONE LINE, allows to dial 2 telephone numbers of up to 11 digits.
✓ Stainless Steel or Painted Vein (textured) lobby panels (Universal or Continental type enclosures).
✓ Watch Dog Timer circuit to automatically reset the unit to eliminate system latch-up.
✓ Compact, small, and easy to install Decoder/Relay Cabinets with LED indicator for each phone line. Ideal for installers and troubleshooting.

INTRODUCTION

MIRCOM'S 9500 Series Entry Systems provides a high quality two way communication between the residents and their visitors in a multi-unit dwelling establishment. The system uses the existing phone lines for communication and access control. The system does not require a subscriber phone line since it uses the existing phone line wiring. No expensive installation costs are incurred compared to traditional hardwired intercom systems. Its versatile design is loaded with standard features such as call waiting, metal keypad, multiple entrance capability, and provision for postal lock. The system lobby panels are available in heavy gauge nonmagnetic stainless steel or painted vein (textured) finish. Surface or Flush mount applications are available by selecting the appropriate enclosure type (Universal or Continental, see page 7). Installation is quick and easy featuring a low voltage operation and complete system programmability using the lobby panel's keypad or IBM® PC †.

† Trademark of International Business Machine personal computer

SPECIFICATIONS

The operating temperature range is 50 °C (122 °F) to -20 °C (-4 °F). It is necessary that an optional TH-101 Thermostat Heater be installed when the ambient temperature falls below 0 °C (32 °F)

Power Supply Voltage Range is 105 to 128 VAC.

Use Loop Start phones only (not Ground Start phones), check with your local telephone company.

OPERATION

STANDARD OPERATION FOR SCROLLING DIRECTORY UNITS:
Visitor calling the Resident:
At the entry point (lobby), the visitor locates the Resident's *Dial Code and Name* by scrolling through the directory list displayed on the screen by using the ***** or # keys. Pressing the ***** or # key momentarily will scroll the list "up or down" one name at a time. Holding the ***** or # key will scroll the list "up or down" continuously and stop scrolling when the key is released. A known *Dial Code* can be entered directly on keypad without scrolling. When a call is placed, a distinguishable ring notifies the resident that a visitor is calling. While talking to the visitor, the resident may dial "**9**" to open the main door or hang-up the phone to refuse entry.

STANDARD OPERATION FOR NON-SCROLLING DIRECTORY UNITS:
Visitor calling the Resident:
At the entry point (lobby), the visitors locates the Resident's *Dial Code* on the directory and enters the appropriate code number on keypad. When a call is placed, a distinguishable ring notifies the resident that a visitor is calling. While talking to the visitor, the resident may dial "**9**" to open the main door or hang-up the phone to refuse entry.

***NOTE**: Residents' telephones must be capable of generating a touch tone (DTMF) or rotary "PULSE" signal for the digit "**9**" for the door release circuit to activate.*

OPERATION FOR AUXILIARY RELAY OUTPUT:
If the auxiliary relay output is used for control of garage or dock doors, the resident can activate or release the auxiliary door by pressing the number "**6**". *This function is available by using a touch tone (DTMF) type telephones.* **No provision** for Pulse (rotary) type telephones.

OPERATION FOR GUARD or CONCIERGE LINE:
The Guard can call the residents or suites by simply dialling ***** key followed by the resident's *Dial Code* . Also, the

Guard can release the door by pressing the **#** key to allow entry. *This function is available by using a touch tone (DTMF) type telephones.* **No provision** for Pulse (rotary) type telephones.

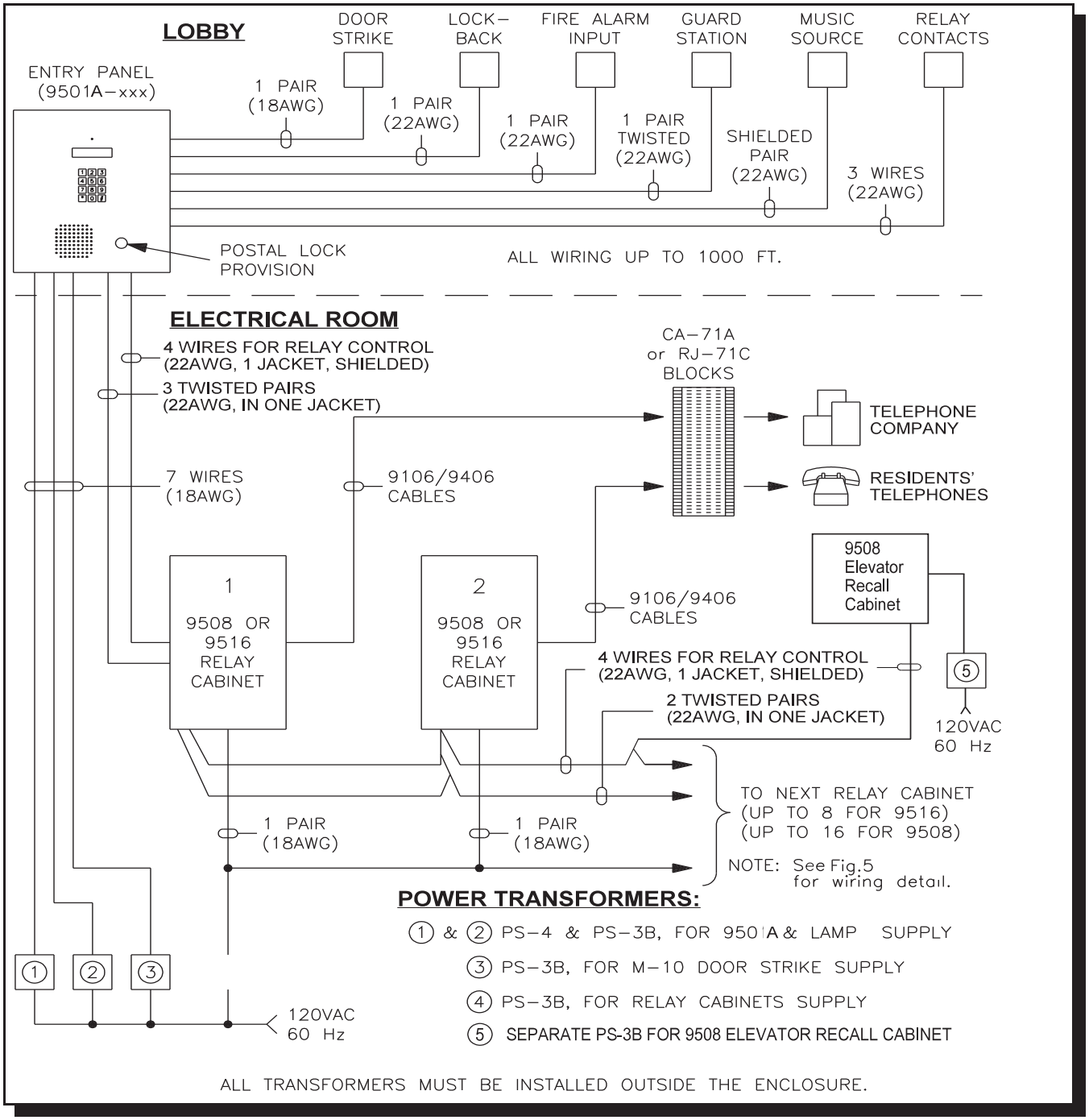
Call Waiting Feature:
All 9500 Series systems has a built-in two-way call waiting feature that notifies the resident (using the phone) with a distinct tone that an incoming caller is waiting. The resident may answer the call by flashing the hook switch. There are two possible scenarios or situation exists here and are described below.

1. The visitors placed a call while the resident is on the phone (conversing with outside party):
In this situation, the resident will hear a distinct tone meaning that a visitor is calling from the lobby. The resident can answer the call by simply flashing the hook switch. This action will automatically put the outside party "on hold". While talking to the visitors, the resident can allow entry by dialling the digit "**9**" to open the main door or to refuse entry simply flash the hook switch or dial digit **"4"**. Either action will reconnect the resident to the outside party (previously put "on hold") to continue their conversation.

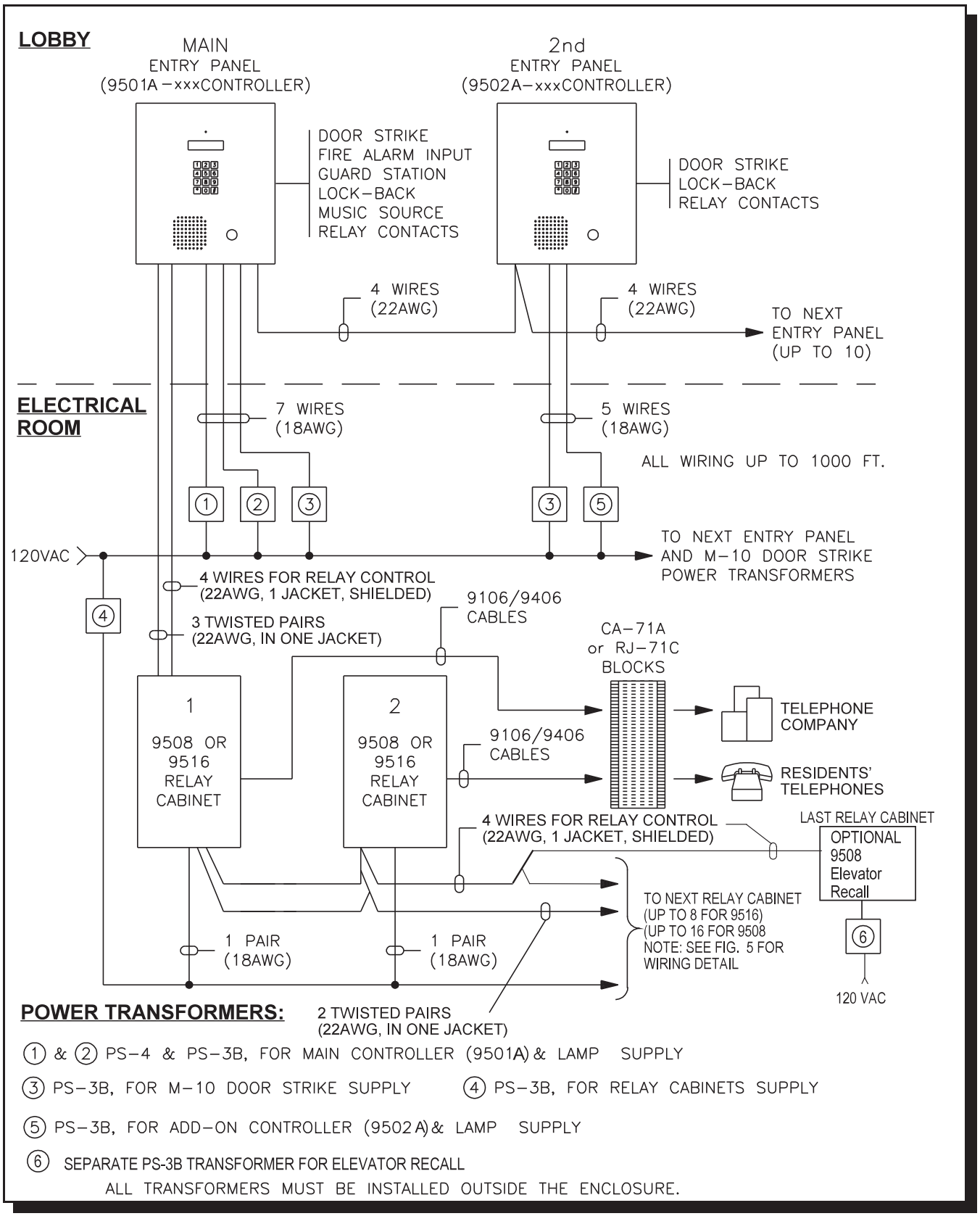
2. The resident received an outside call while talking to the visitors in the lobby:
In this situation, the resident will hear a distinct tone meaning that an outside line caller is waiting. There are two ways to answer this call. One is to hang up the phone by simply flashing the hook switch or dial the digit **"4"** (refusing entry). The second is by dialling the digit "**9**" which would allow entry. Both actions will automatically connect the resident to the outside line. Please note that the resident **cannot put the visitors on hold** because of the allowable talk-time limit of the system.

SYSTEM BLOCK DIAGRAMS

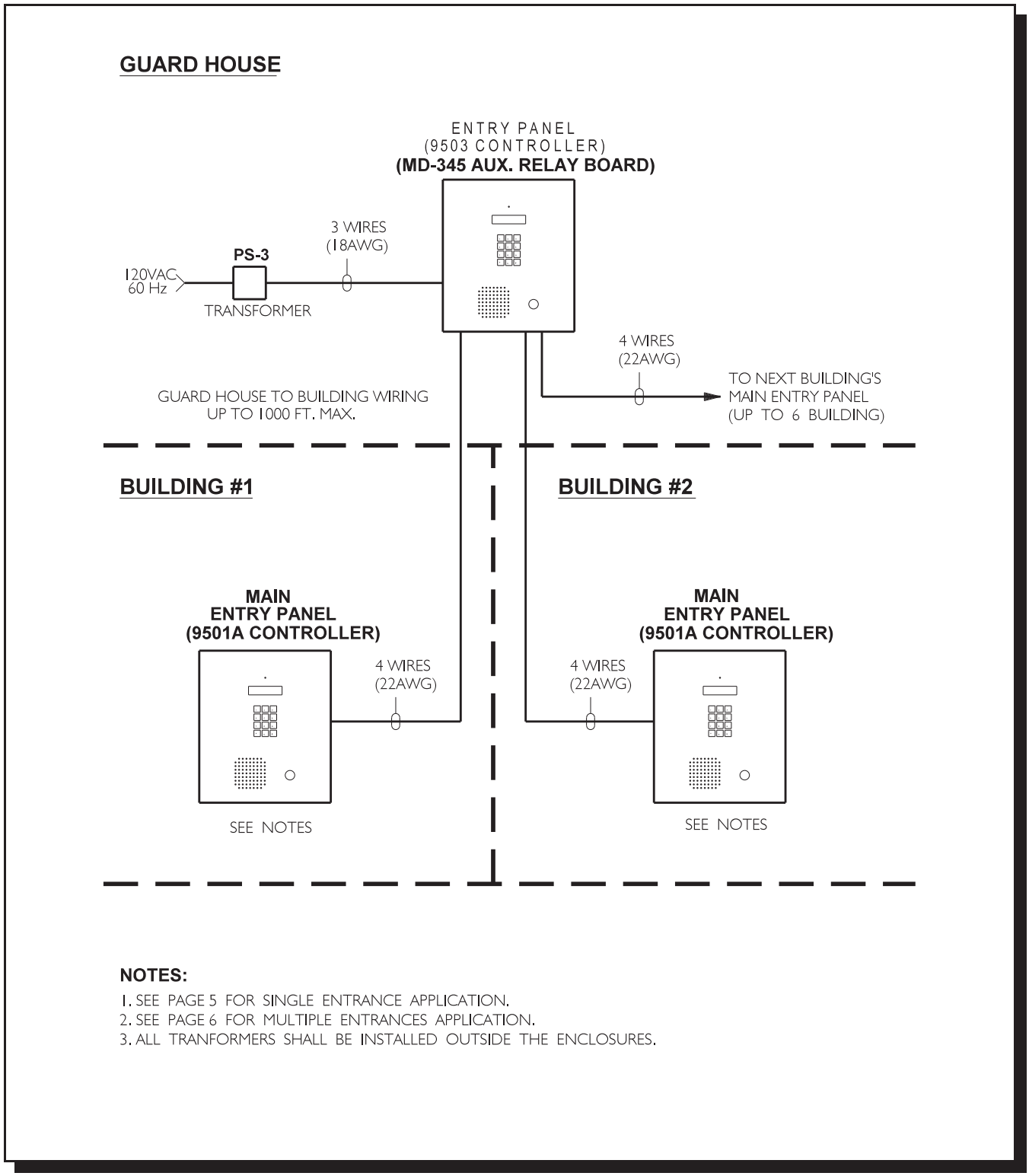
SINGLE ENTRANCE APPLICATION:



MULTIPLE ENTRANCES APPLICATION:



MULTIPLE BUILDING APPLICATION:



NOTES:

1. SEE PAGE 5 FOR SINGLE ENTRANCE APPLICATION.
2. SEE PAGE 6 FOR MULTIPLE ENTRANCES APPLICATION.
3. ALL TRANFORMERS SHALL BE INSTALLED OUTSIDE THE ENCLOSURES.

PRE-INSTALLATION PLANNING

Before the actual installation begins, the system requires various items to be pre-arranged and are described below:

1. ENTRY OR LOBBY PANEL TYPES

The **UNIVERSAL** series entry/lobby panels are hooded surface mount enclosures with built-in lighting for outdoor or indoor applications. Optional flush trim rings are available for semi-flush installations. There are six (6) models available and are listed below:

Universal Panels for Scrolling Directory:

Model MUS-5000SV ⇨ Stainless Steel finish entry panel comes with keypad, 4x20 VFD display, microphone, speaker, and micro switch for postal lock. No controller.

Model MUS-5000SHV ⇨ Stainless Steel finish entry panel comes with keypad, 4x20 VFD display, armoured handset, and micro switch for postal lock. No controller.

Universal Panels for Non-Scrolling Directory:

Model MUS-5000 ⇨ Stainless Steel finish entry panel comes with keypad, 2x16 LCD display, microphone, speaker, and micro switch for postal lock. No directory and controller.

Model MUS-5000H ⇨ Stainless Steel finish entry panel comes with keypad, 2x16 LCD display, handset, and micro switch for postal lock. No directory and controller.

Model MUS-5120 ⇨ Stainless Steel finish entry panel comes with keypad, 2x16 LCD display, microphone, speaker, micro switch for postal lock, and paper directory for 120 names. No controller.

Model MUS-5120H ⇨ Stainless Steel finish entry panel comes with keypad, 2x16 LCD display, handset, micro switch for postal lock and paper directory for 120 names. No controller.

Accessories:

Model MUFT-5000P ⇨ Flush trim ring for MUS-5000/H/S/SH panels.Painted black (textured).

Model MUFT-5120P ⇨ Flush trim ring for MUS-5120/H, and MPD-5240 panels. Painted black (textured).

Model MPD-5120 ⇨ Stainless Steel add-on paper directory panel, 120 names capacity.

Model MPD-5240 ⇨ Stainless Steel add-on paper directory panel, 240 names capacity.

Model MLK-040 ⇨ Magnetic strips directory kit, 40 names capacity. It comes with plastic letters, magnetic strips, brackets, and hexnuts.

Model TH-101 ⇨ Thermostat heater.

Note: *Painted Silver, Gold & Copper Vein lobby panels are available by custom order.*

The **CONTINENTAL** series entry/lobby panels are designed for indoor applications only. These elegant lobby panels can be mounted either flush or surface by selecting the appropriate backbox. There are six (6) models available and are listed below:

Continental Panels for Scrolling Directory:

Model MCS-6001SV ⇨ Stainless Steel finish entry panel comes with keypad, 4x20 VFD display, microphone, speaker, and micro switch for postal lock. No controller.

Model MCS-6001SHV ⇨ Stainless Steel finish entry panel comes with keypad, 4x20 VFD display, armoured handset, and micro switch for postal lock. No controller.

Continental Panels for Non-Scrolling Directory:

Model MCS-6000 ⇨ Stainless Steel finish entry panel comes with keypad, 2x16 LCD display, microphone, speaker, and micro switch for postal lock. No directory and controller.

Model MCS-6000H ⇨ Stainless Steel finish entry panel comes with keypad, 2x16 LCD display, handset, and micro switch for postal lock. No directory and controller.

Model MCS-6240 ⇨ Stainless Steel finish entry panel comes with keypad, LCD display, microphone, speaker, micro switch for postal lock, and paper directory for 240 names. No controller.

Model MCS-6240H ⇨ Stainless Steel finish entry panel comes with keypad, LCD display, handset, micro switch for postal lock and paper directory for 240 names. No controller.

Accessories:

Model MPD-6240 ⇨ Add-on paper directory panel, 240 names capacity.

Model MPD-6480 ⇨ Add-on paper directory panel, 480 names capacity.

Model BBF-6001 ⇨ Flush backbox for MCS-6001S/SH. Satin coat finish.

Model BBS-6003 ⇨ Surface backbox for MCS-6001S/SH. Painted black (textured).

Model BBF-6101 ⇨ Flush backbox for MCS-6000, MCS-6000H, and MPD-6120 panels.

Model BBF-6102 ⇨ Flush backbox for MCS-6240, MCS-6240H, and MPD-6480 panels.

Model BBS-6301 ⇨ Surface backbox for MCS-6000, MCS-6000H, and MPD-6240.

Model BBS-6302 ⇨ Surface backbox for MCS-6240, MCS-6240H, and MPD-6480 panels.

Model MLK-070 ⇨ Magnetic strip directory kit, 70 names capacity. It comes with plastic letters, magnetic strips, brackets, and hexnuts.

Note: *Painted Silver, Gold & Copper Vein lobby panels are available by custom order.*

2. CONTROLLERS

SCROLLING DIRECTORY CONTROLLERS: For both LCD and VFD Display

Model 9501-040A ⇨ Main Controller. 40 names capacity.

Model 9501-120A ⇨ Main Controller. 120 names capacity.

Model 9501-360A ⇨ Main Controller. 360 names capacity.

Model 9501-800A ⇨ Main Controller. 800 names capacity.

Model 9502-040A ⇨ Add-on Controller for auxiliary entrance(s). 40 names capacity.

Model 9502-120A ⇨ Add-on Controller for auxiliary entrance(s). 120 names capacity.

Model 9502-360A ⇨ Add-on Controller for auxiliary entrance(s). 360 names capacity.

Model 9502-800A ⇨ Add-on Controller for auxiliary entrance(s). 800 names capacity.

Note: *Make sure to order the proper lobby panels meant for scrolling directory.*

Optional Programming Software Kit:

Model **RS-485IM** Interface Module, along with **MSW-001** MirSoft TAS programming software, is an optional programming kit to enable the user to **upload** or **download** residents' names, dial codes, keyless entry codes, and relay line numbers using a personal computer. This software can be used on IBM® PC/XT/286/386/486/Pentium Compatible PC under MS-DOS® version 5 or higher, Windows 95® or higher, OS/2® with Colour or Monochrome Text Screen (MDA, CGA, EGA, VGA, SVGA) capability and one serial port. To order this kit, please consult our factory for further information.

NON-SCROLLING DIRECTORY CONTROLLERS:

Model 9501A ⇨ Main Controller.1000 residents capacity.

Model 9502A ⇨ Add-on Controller for auxiliary entrance(s). 1000 residents capacity.

Model 9503 ⇨ Multi-Building Guard House Controller. 1000 residents capacity.

Accessory:

PCB Assy.: MD-345 ⇨ Auxiliary 6 relay board. This module is intended for use of Multiple Building Application or for applications where relay contacts are required for activation of peripherals. Please contact our Engineering Field Support Personnel for detailed wiring scheme and information.

Note: *Make sure to order the proper lobby panels meant for non-scrolling directory.*

3. DECODER/RELAY CABINETS

Model 9508 ⇨ Decoder/relay cabinet can hold up to eight (8) relay cards or ninety six (96) telephone lines. Relay cards not included.

Model 9516 ⇨ Decoder/relay cabinet can hold up to sixteen (16) relay cards or one hundred ninety two (192) telephone lines. Relay cards not included.

Accessories:

Model 9512 ⇨ Relay Card interfaces up to 12 telephone lines.

Model 9512E ⇨ Elevator Recall Relay Card provides up to 12 relay contacts.

Model 9106 ⇨ 6 Ft. Amphenol Cable. Standard for 9500 Series systems. Use this cable for CA-71A or RJ-71C configured BIX Block.

Model 9106E ⇨ 6 Ft. Amphenol Cable. Use this cable for interfacing the 9500 series systems to existing RJ-71A configured BIX Block.

Model 9406 ⇨ 6 Ft. Octopus Relay Cable. Use this cable for custom wiring the telephone's Tip and Ring by using the standard CA-38A (RJ-38A) modular jacks.

4. SITE SELECTION

The Entry Panel should be installed as near as possible to the controlled entry point. Do not install the system in a location where the LCD display is exposed to direct sunlight since it will reduce visibility.

5. POWER SUPPLY REQUIREMENTS

Select the appropriate power transformers required by your system configuration. Below are the transformer models that are available:

.

Model PS-4 ⇨ 16 VAC/ 40 VA, CSA approved Class 2 Power Transformer.

Model PS-3B ⇨ 8 VAC/13 VA, 16 VAC/17 VA, 24 VAC/20 VA, CSA approved Class 2 Power Transformer.

Model PS-13 ⇨ 12VDC, 200mA.

6. WIRING REQUIREMENTS

Count the number of wires and identify the proper gauges that are required for your system configuration. For a typical Single or Multiple entrance application, please refer to pages 5 and 6. For System Block Diagrams page 7. For custom applications, we recommend consulting our Application Engineering personnel for evaluation.

7. CA-71A BIX Block or RJ-71C Punch Down Block Wiring Configuration

CA-71A (for Canada) and RJ-71C (for U.S.A.) Wiring Configurations of BIX or Punch Down Block can be found in Appendices A-1 and A-2 respectively. Normally, the required blocks are installed by the telephone company. Each block serves up to 12 telephone lines. The 50 pins Amphenol connector on the BIX block is connected to the 9512 relay card using the standard 9106 cable. Contact the telephone company at least three (3) weeks in advance before the actual installation and order the required blocks. Complete the CA-71A or RJ-71C Block Identification Form in Appendix B-1 or B-2 (as required) for the phone installer. The form instructs the phone installer how the phone lines should be wired to the BIX/Punch Down Blocks. If possible, all BIX Blocks should be installed as close as possible to the 9508 or 9516 Decoder/relay Cabinet(s).

The following information must be given to the Telephone Company:

1. Telephone numbers of the lines to which the 9500 system will be connected.
2. The Industry Canada (formerly D.O.C.) registration number **1156 6200 A** for Canada.
3. The F.C.C. registration number **1M8CAN-21269-DT-E** for U.S.A.
3. The ringer equivalence number (REN) of 9500 system is **0.0B**.

Note: *RJ-71C Wiring Configuration is not recognized by all telephone companies. For Bell Canada who has jurisdiction for Ontario and Quebec, refer to CA-71A block for interconnect to the Telephone Entry systems.*

Important notice:

Since there are two types of block wiring configuration, CA-71A and RJ-71C, we recommend the user contact the Telephone Company as to what block wiring configuration is available. We suggest using Mircom's standard 9106 cable for CA-71A or RJ-71C configured blocks since they are straight forward and easy to use.

8. DOOR STRIKES

Select the appropriate door strike as required by your system applications. We recommend using Mircom's door strikes below and its compatible power transformer. See appendix "C" for door strikes' specifications.

Model M-10 ⇨ DC (silent) or AC (buzzing) Door Strike. Use PS-3B transformer.
Model M-10HD ⇨ AC (buzzing) Heavy Duty Door Strike. Use PS-3B transformer.
Model M-20 ⇨ DC (silent) or AC (buzzing) Heavy Duty Door Strike. Use PS-3B transformer.

Important notice:

The door strike must have its own separate power transformer. Do not tap or use the system power transformers. When using a different door strike and door strike transformer, the maximum strike load that may be switched through the control unit is 28 VAC or DC, 3.0 Amp. Maximum.

9. POST OFFICE LOCK

The system has a built-in micro switch and mounting hardware for postal lock installation. If a postal service is required, contact the Post Office to obtain the lock.

MOUNTING THE UNIVERSAL TYPE LOBBY/ENTRY PANEL

Mount the panel as shown on FIG.1 and FIG.2 using the supplied screws.

FIG.1: SEMI-FLUSH TRIM RING INSTALLATION

TRIM RINGS

MODEL NO.	DIM. `A'	DIM. `B'
MUFT-5000P	14 1/8"	11 9/16"
MUFT-5120P	23 7/8"	21 5/16"

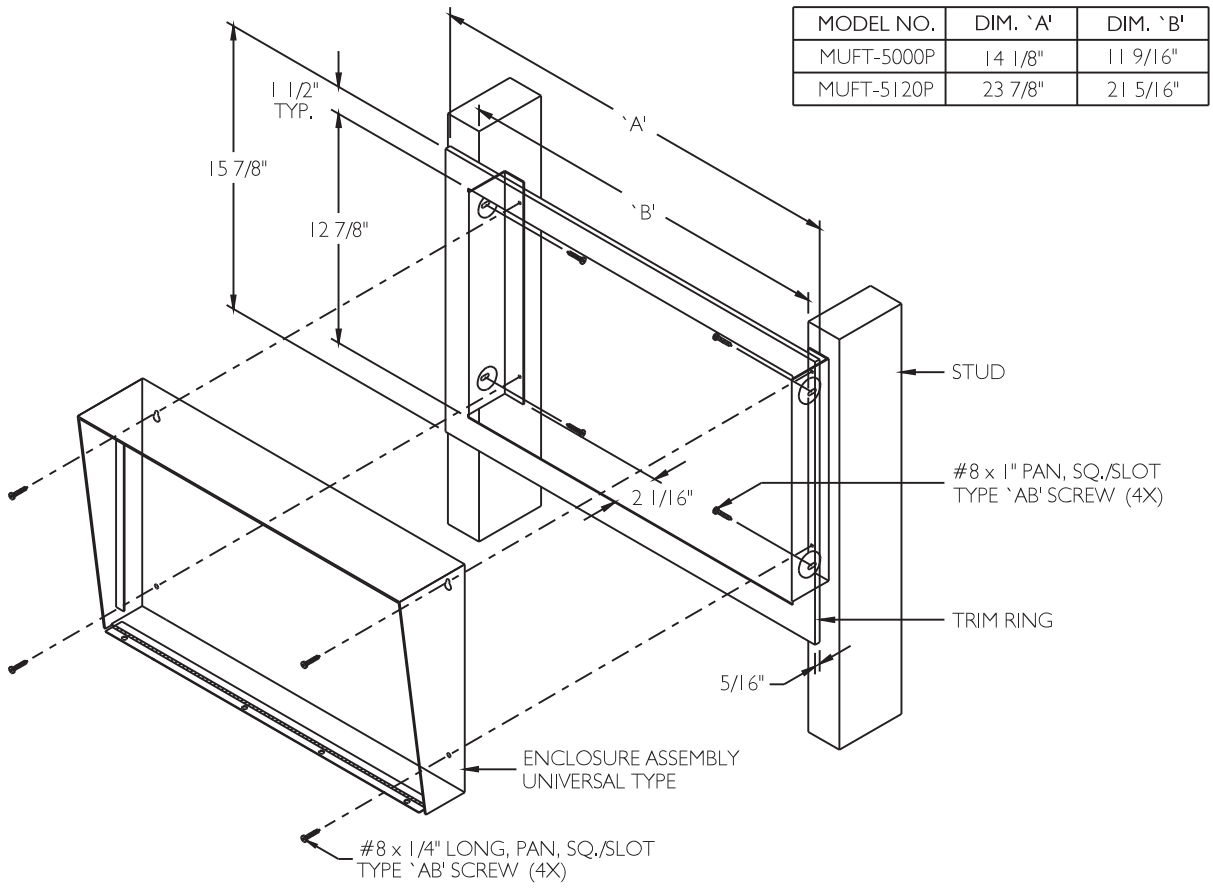
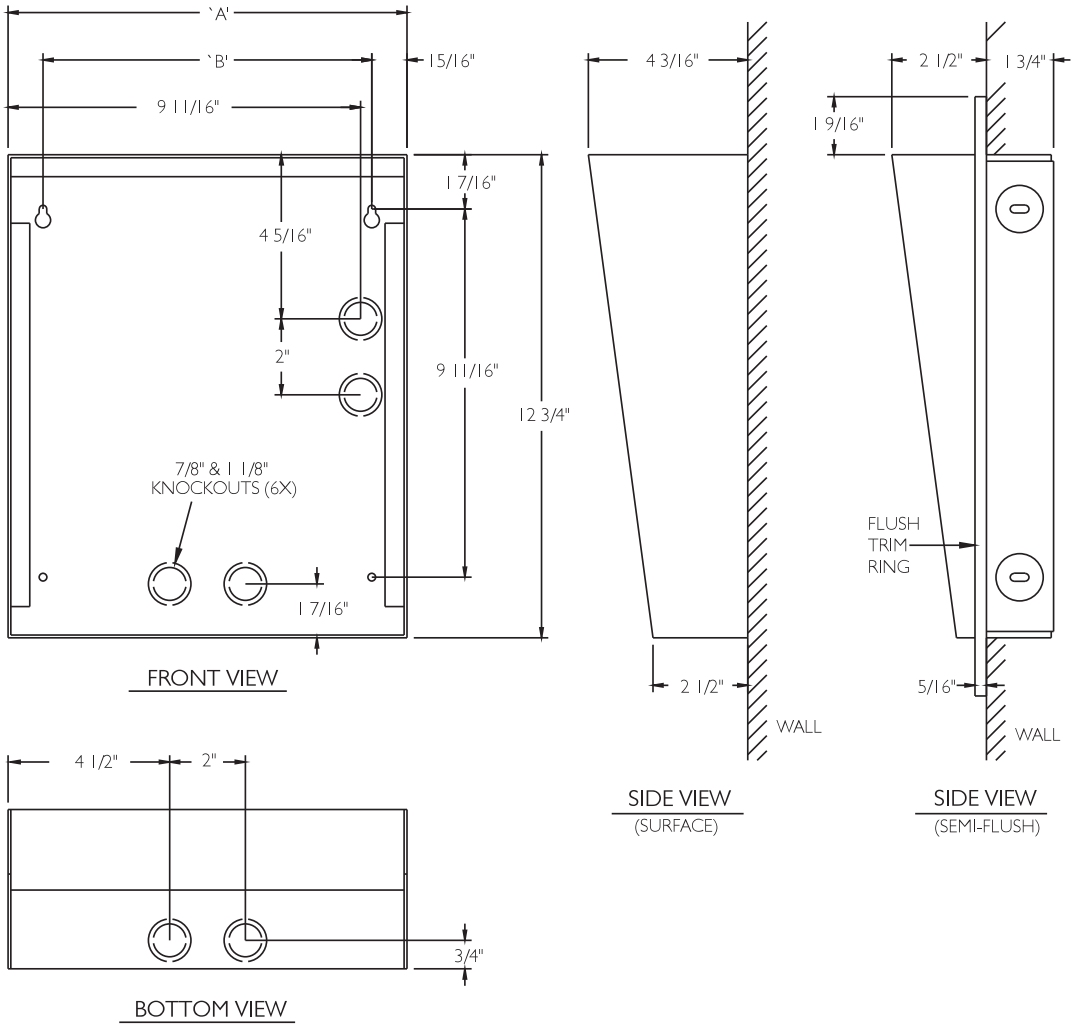


FIG. 2: PANEL INSTALLATION



MODEL NO.	DIM. `A'	DIM. `B'	SEMI-FLUSH TRIM RING IF REQUIRED
MUS-5000/H/S/SH, MPD-5120	11"	9 3/16"	MODEL MUFT-5000P
MUS-5120, MUS-5120H, MPD-5240	20 3/4"	18 15/16"	MODEL MUFT-5120P

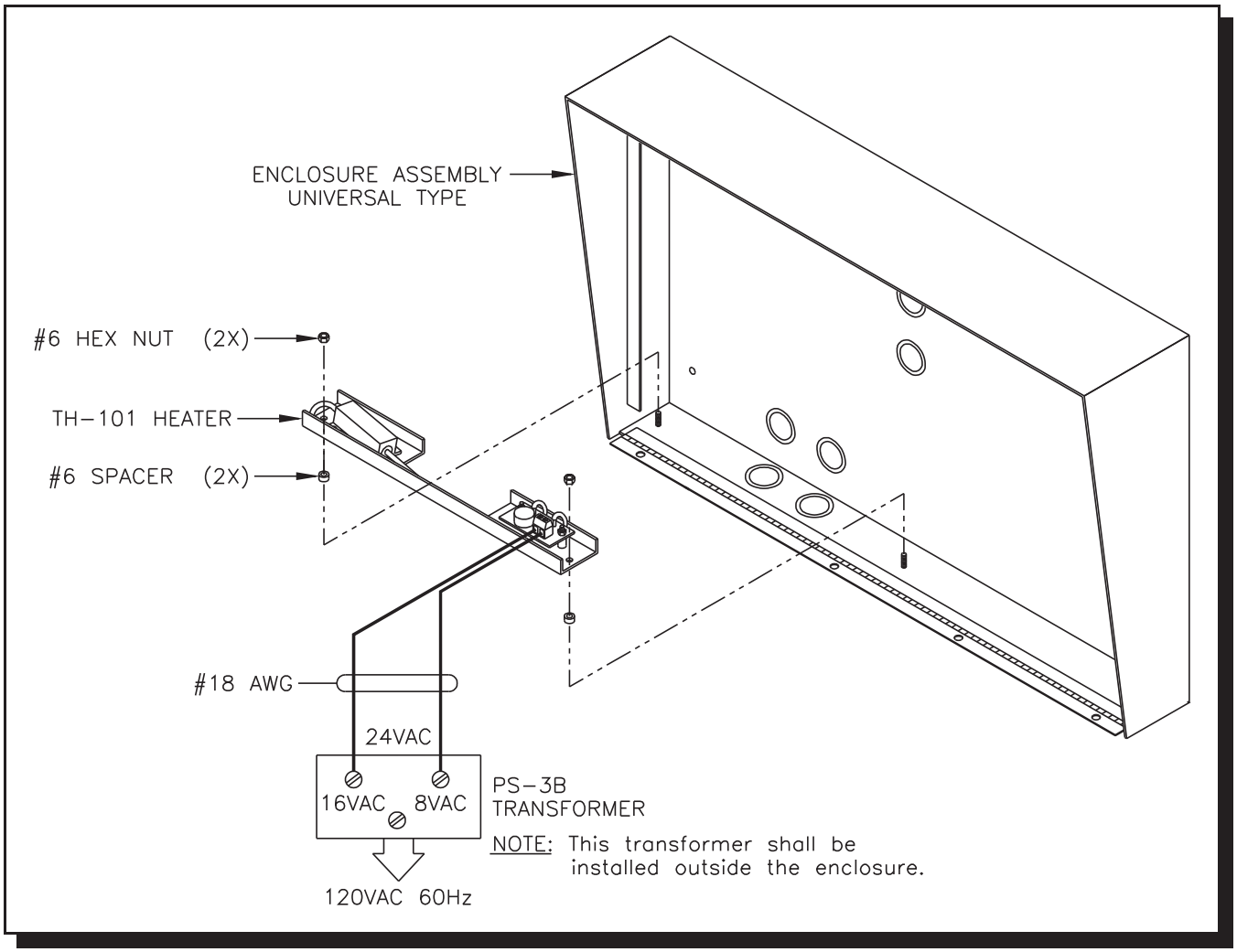
MOUNTING THE MAGNETIC LETTER KIT MODEL MLK-040 (OPTIONAL)

Mount the Magnetic Letter Kit according to the Installation Instruction that comes with the Kit. Extra characters and magnetic strips can be ordered separately. Please contact the factory or our nearest dealer.

MOUNTING THE THERMOSTAT HEATER KIT MODEL TH-101 (OPTIONAL)

Mount the Heater Kit according to Fig 2A . Install the TH-101 Heater into bottom left hand corner of the universal enclosure using the two spacers and two hex nuts provided. Use a pair of #18 AWG wires to connect from the TH-101 unit to 24VAC tap on the PS-3B transformer. The transformer must be installed outside the enclosure.

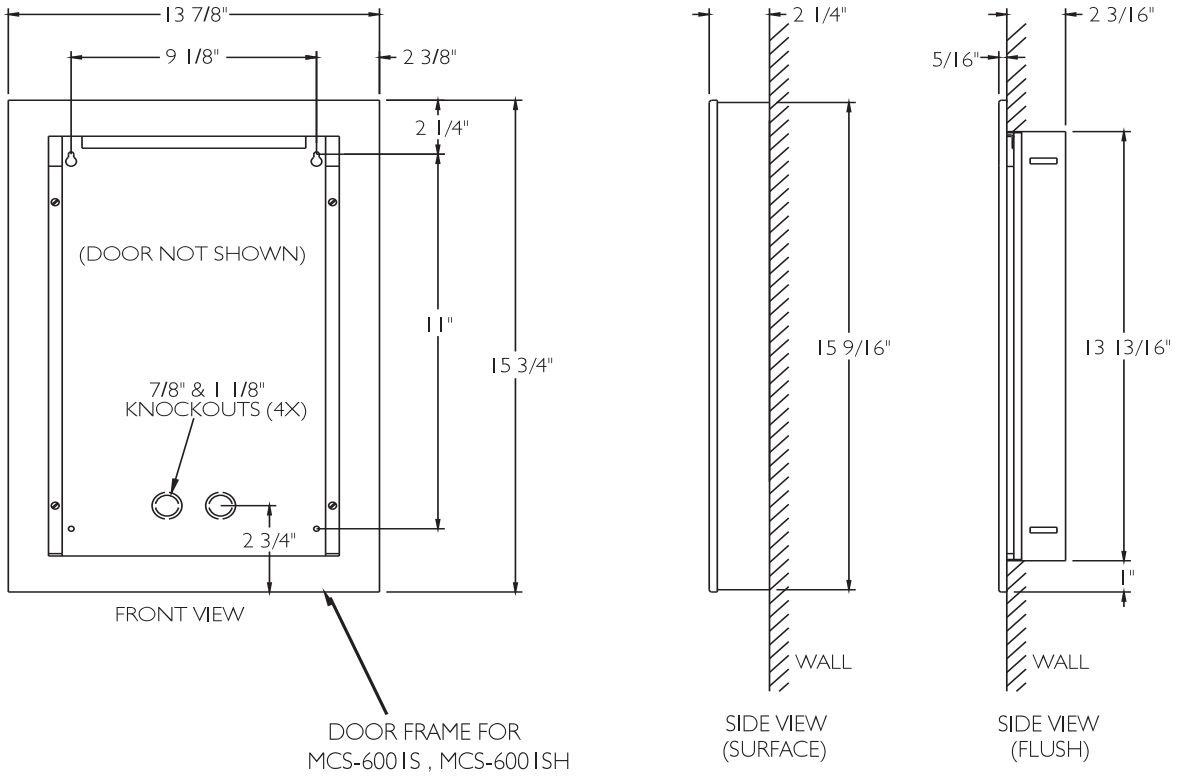
Fig. 2A: HEATER INSTALLATION

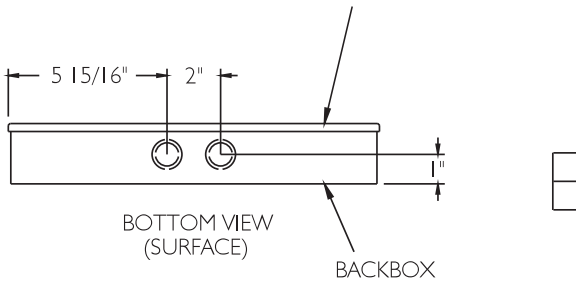


MOUNTING THE CONTINENTAL TYPE LOBBY/ENTRY PANEL

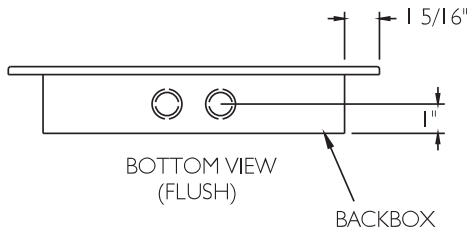
Mount the panels as shown on **FIG.3** (*for scrolling*) or **FIG.3A** (*for non-scrolling*) using the supplied screws.

FIG. 3: SCROLLING DIRECTORY PANELS



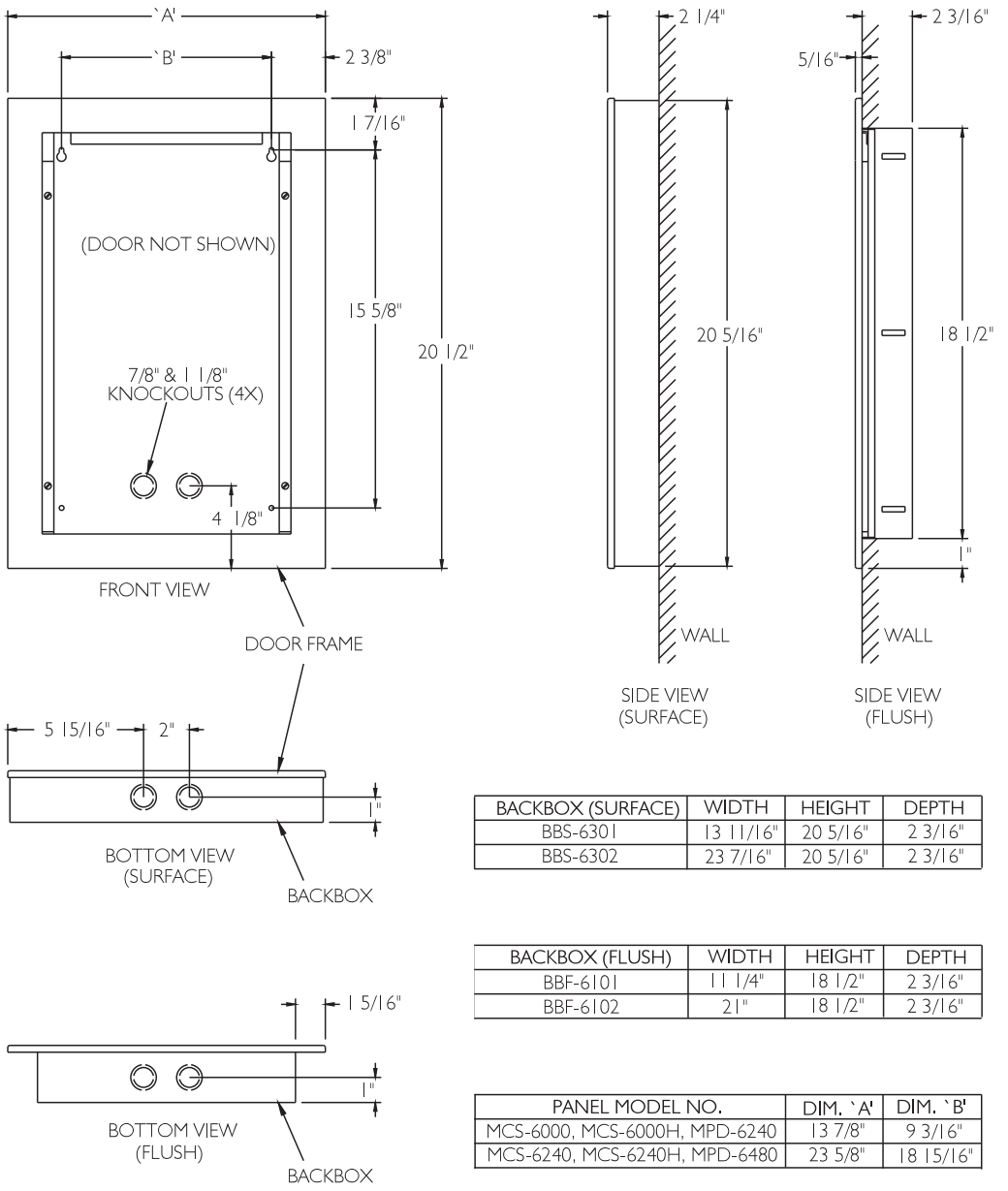


BACKBOX (SURFACE)	WIDTH	HEIGHT	DEPTH
BBS-6003	13 11/16"	15 9/16"	2 3/16"



BACKBOX (FLUSH)	WIDTH	HEIGHT	DEPTH
BBF-6001	11 1/4"	13 13/16"	2 3/16"

FIG. 3A: NON-SCROLLING DIRECTORY PANELS



BACKBOX (SURFACE)	WIDTH	HEIGHT	DEPTH
BBS-6301	13 11/16"	20 5/16"	2 3/16"
BBS-6302	23 7/16"	20 5/16"	2 3/16"

BACKBOX (FLUSH)	WIDTH	HEIGHT	DEPTH
BBF-6101	11 1/4"	18 1/2"	2 3/16"
BBF-6102	21"	18 1/2"	2 3/16"

PANEL MODEL NO.	DIM. `A'	DIM. `B'
MCS-6000, MCS-6000H, MPD-6240	13 7/8"	9 3/16"
MCS-6240, MCS-6240H, MPD-6480	23 5/8"	18 15/16"

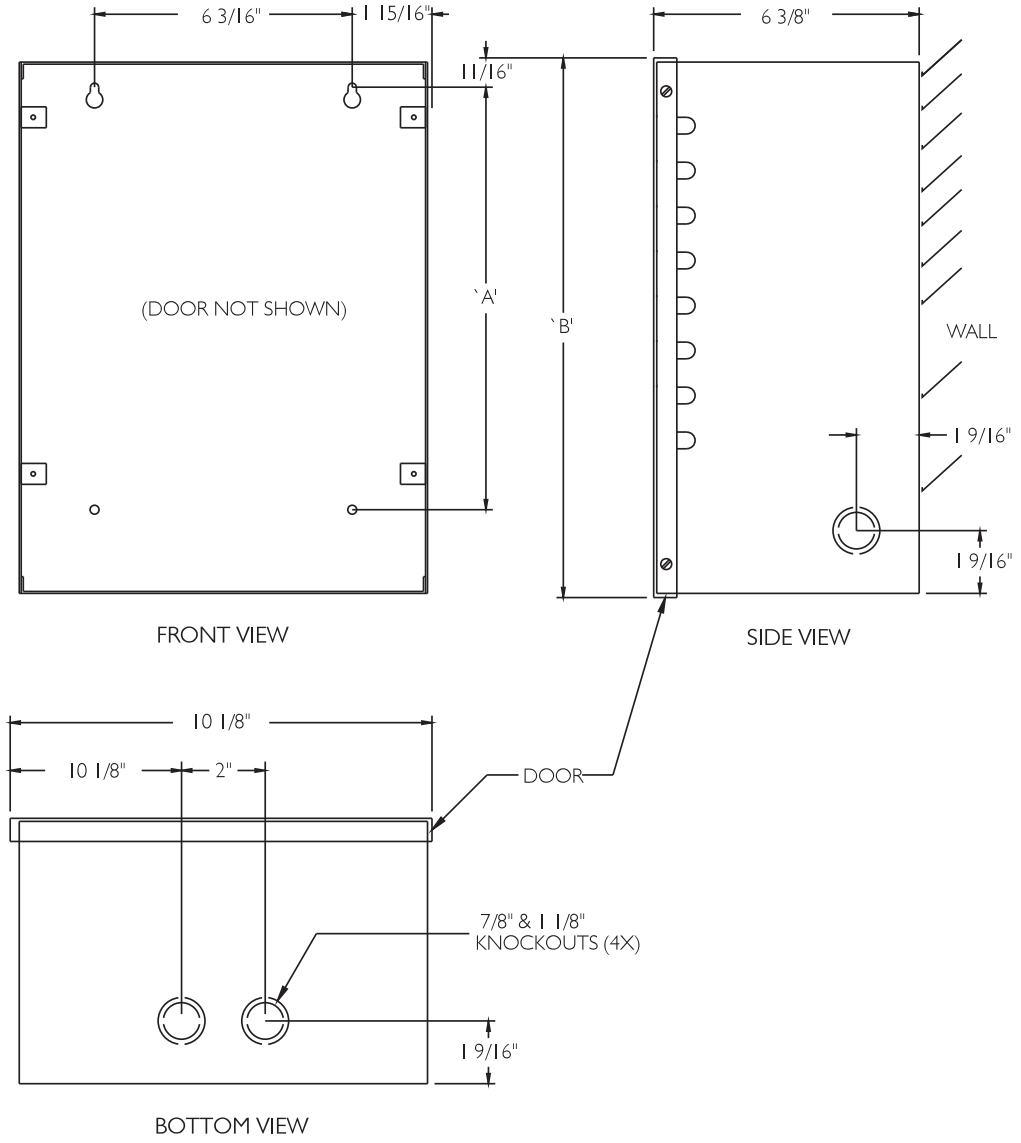
MOUNTING THE MAGNETIC LETTER KIT MLK-070 (OPTIONAL)

Mount the Magnetic Letter Kit according to the Installation Instruction that comes with the Kit. This kit is used only for Continental type lobby/entry panel.

MOUNTING THE DECODER/RELAY CABINET

Mount the Decoder/Relay Cabinet as shown on FIG. 4 using the supplied screws.

FIG. 4: CABINET INSTALLATION



MODEL NO.	DIM. `A'	DIM. `B'
9508 (8 CARDS RELAY CABINET)	10 1/8"	13 15/16"
9516 (16 CARDS RELAY CABINET)	23 3/16"	27"

ELECTRONIC MODULES INSTALLATION INSTRUCTIONS

MOUNTING THE 9501A, 9502A, or 9503 CONTROLLERS
Mount the controllers according to their respective installation instructions and follow the precautions mentioned on the package. It is important to note that these modules are sensitive to electrostatic discharge and must be handled properly. To avoid static discharge, we recommend touching a metallic object before opening the packages and handling these modules. These Controllers can be mounted on either Universal or Continental type lobby/entry panels.

MOUNTING THE MD-345 (Aux. Relay Board)
Mount the board as shown on the installation instructions that come with the module.

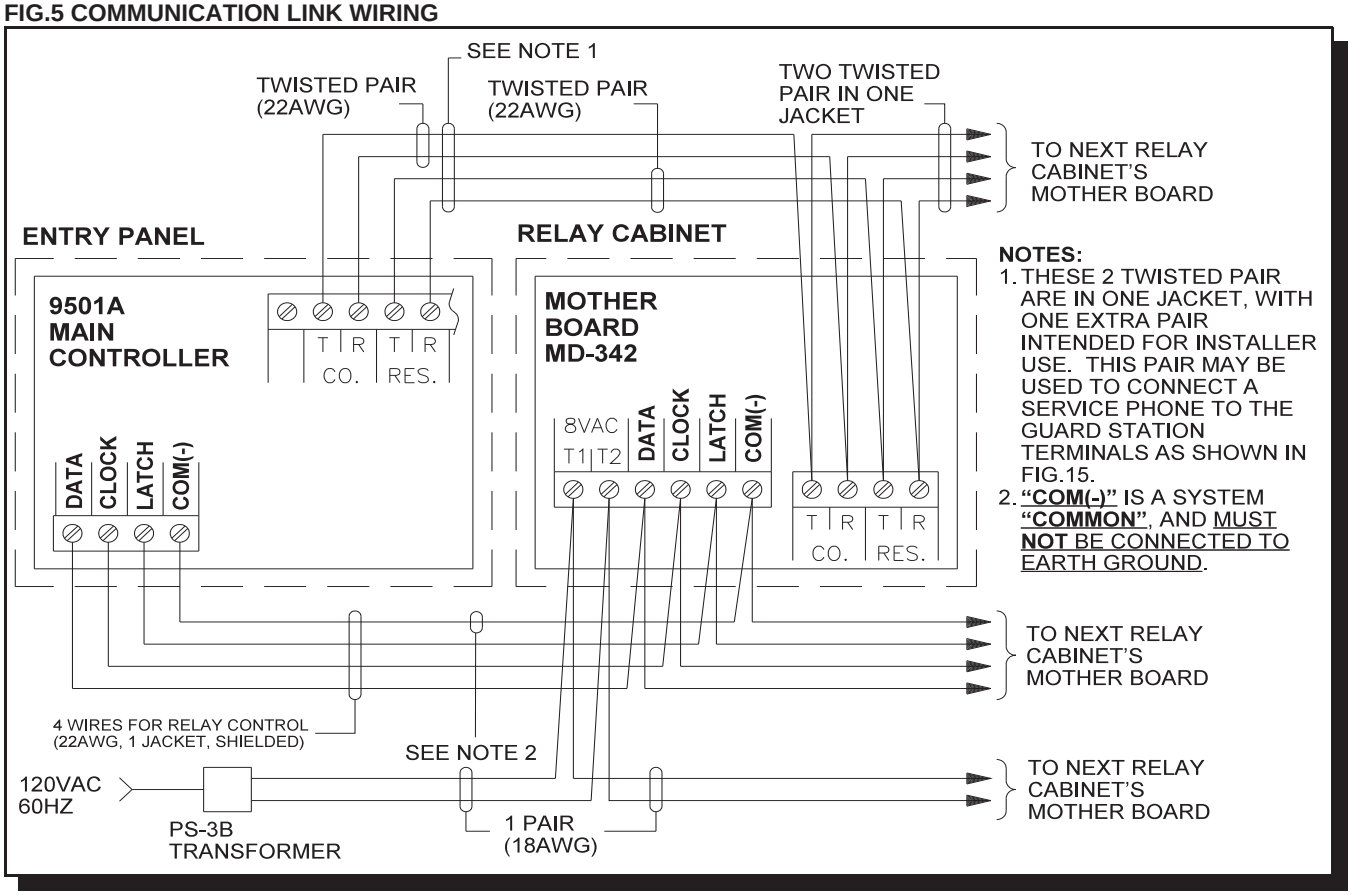
RELAY CARDS MODEL 9512 INSTALLATION
Install the relay cards by matching the polarizing plastic peg and the keyhole on the decoder/mother board. No configuration or jumper setting is required. All plugged-in relay cards are recognized automatically by the system. Connect the 6 ft. Amphenol Cables models 9106 (standard), 9106E (interface to existing RJ-71A BIX Blocks), 9106BC or 9406 (octopus) to the relay cards and tighten the screw(s) to secure the cables to the plates.

SYSTEM WIRING INSTRUCTIONS

WIRING THE 9501A (Main Controller) TO 9508 or 9516 (Relay Cabinets)

Note that the Relay Control wiring (Data, Clock, Latch, Gnd) needs to be shielded 4-wire 22AWG cable. The shields must be connected to **Earth Ground** at each terminating point. Also note that the Relay Control line "COM(-)" (marked "GND" on some older boards) is a system "Common" and **MUST NOT** be connected to Earth Ground !

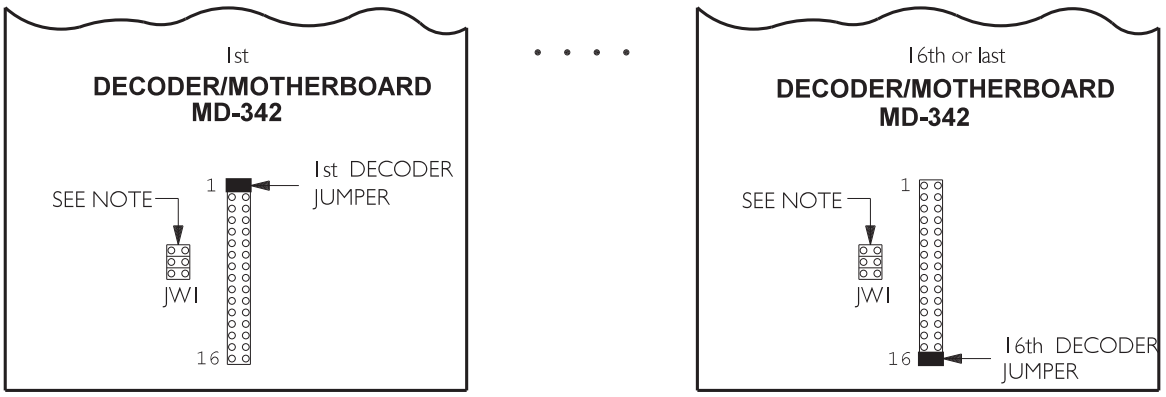
FIG.5 COMMUNICATION LINK WIRING



RELAY CABINET'S DECODER/MOTHER BOARD JUMPER CONFIGURATION

Install jumpers as shown in FIG. 6.

FIG. 6: DECODER/MOTHER BOARD SELECT JUMPER SETTINGS

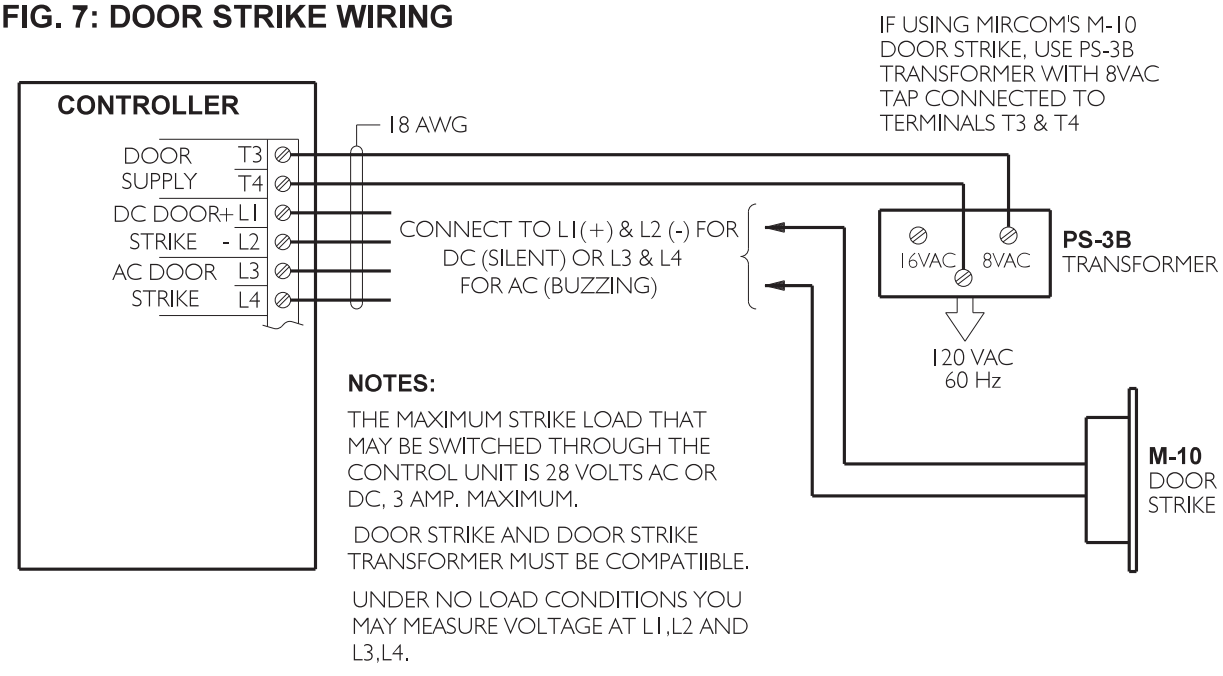


NOTE:
INSTALL ALL THREE(3) JUMPERS ON THE LAST DECODER/MOTHER BOARD ONLY.
REMOVE AND DISCARD ALL OTHER (JW1) JUMPERS.

WIRING THE DOOR STRIKE TO 9501A, 9502A, or 9503 (Controllers)

Wire the Door Strike as shown in FIG. 7.

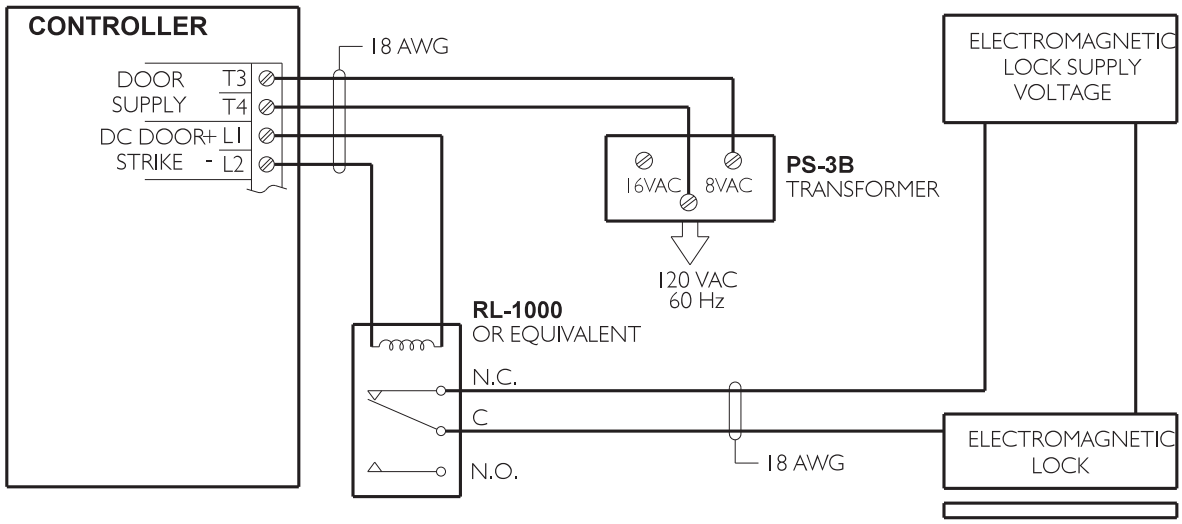
FIG. 7: DOOR STRIKE WIRING



WIRING THE ELECTROMAGNETIC DOOR LOCK TO 9501A, 9502A, or 9503 (Controllers)

Wire as shown in FIG. 8.

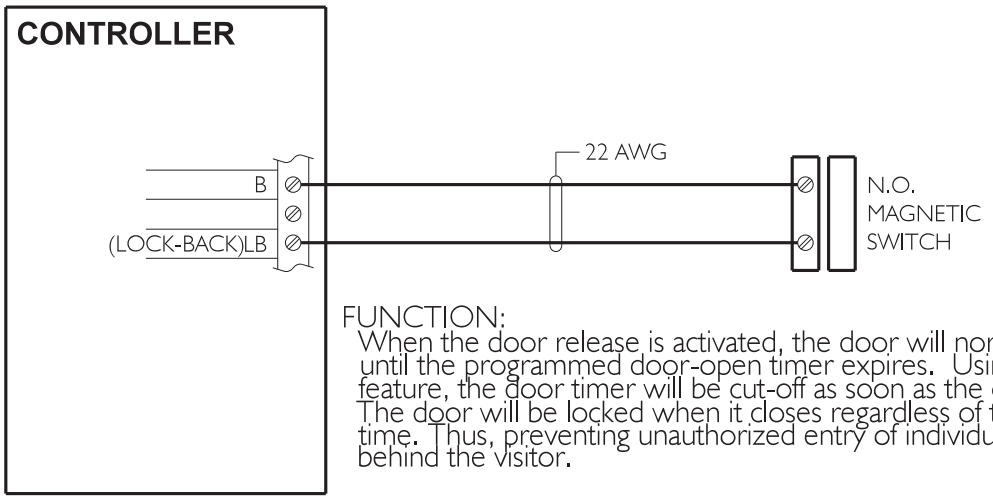
FIG. 8: ELECTROMAGNETIC LOCK WIRING



WIRING THE LOCK-BACK SWITCH TO 9501A, 9502A, or 9503 (Controllers)

Wire the Lock-Back Switch as shown in FIG. 9 to enable automatic door-open timer cut-off.

FIG. 9: LOCK-BACK WIRING

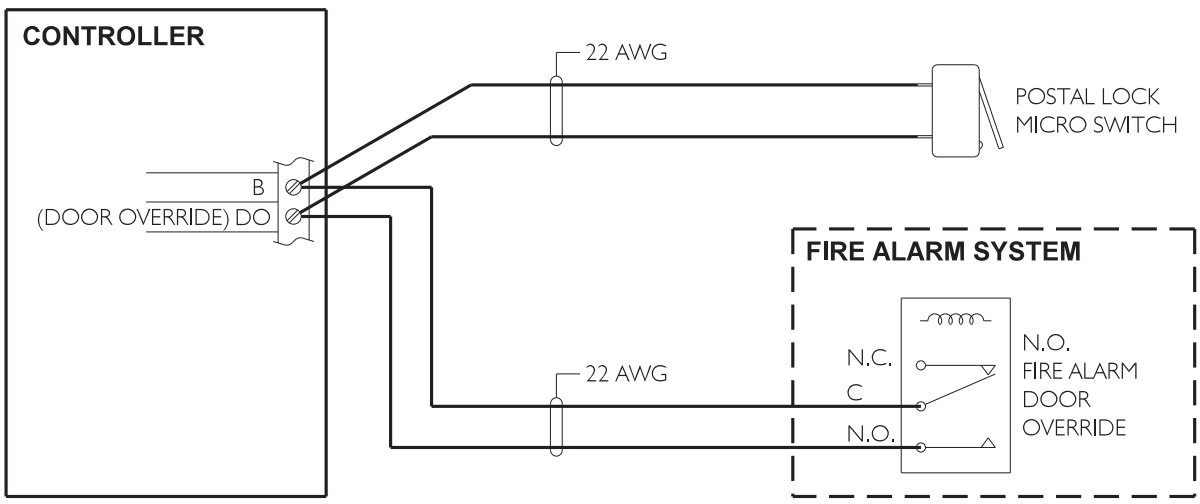


FUNCTION:
When the door release is activated, the door will normally remain open until the programmed door-open timer expires. Using the Lock-Back feature, the door timer will be cut-off as soon as the door is opened. The door will be locked when it closes regardless of the programmed time. Thus, preventing unauthorized entry of individuals who follow behind the visitor.

WIRING THE DOOR OVERRIDE (Postal Lock & Fire Alarm) to 9501A, 9502A, or 9503 (Controllers)

Wire as shown in FIG.10.

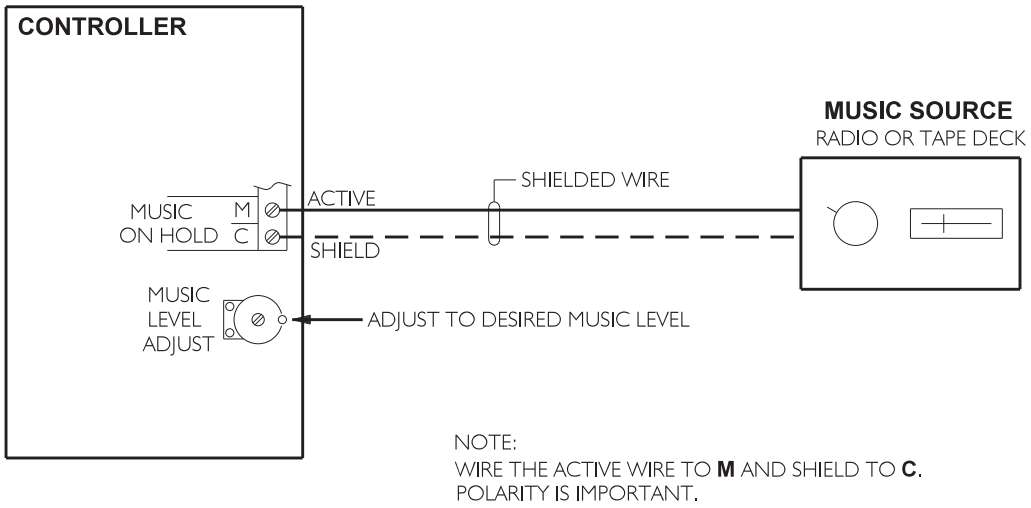
FIG. 10: DOOR OVERRIDE WIRING



WIRING THE MUSIC SOURCE TO THE 9501A CONTROLLER

Wire the Radio or Tape Deck's audio output as shown in FIG. 11.

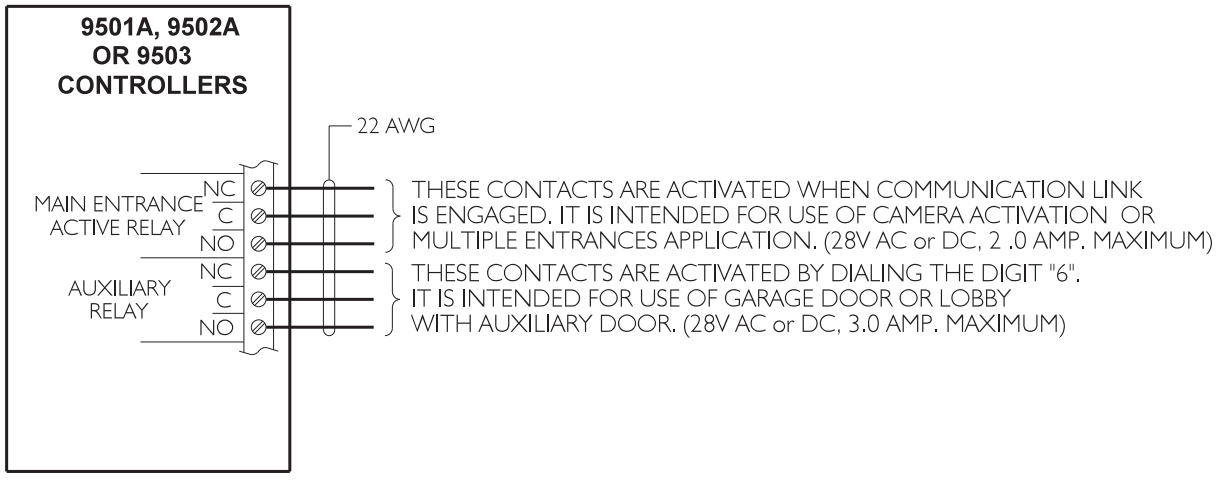
FIG. 11: MUSIC SOURCE WIRING



WIRING THE AUXILIARY RELAY and MAIN ENTRANCE ACTIVE RELAY CONTACTS

Wire as shown in FIG.12.

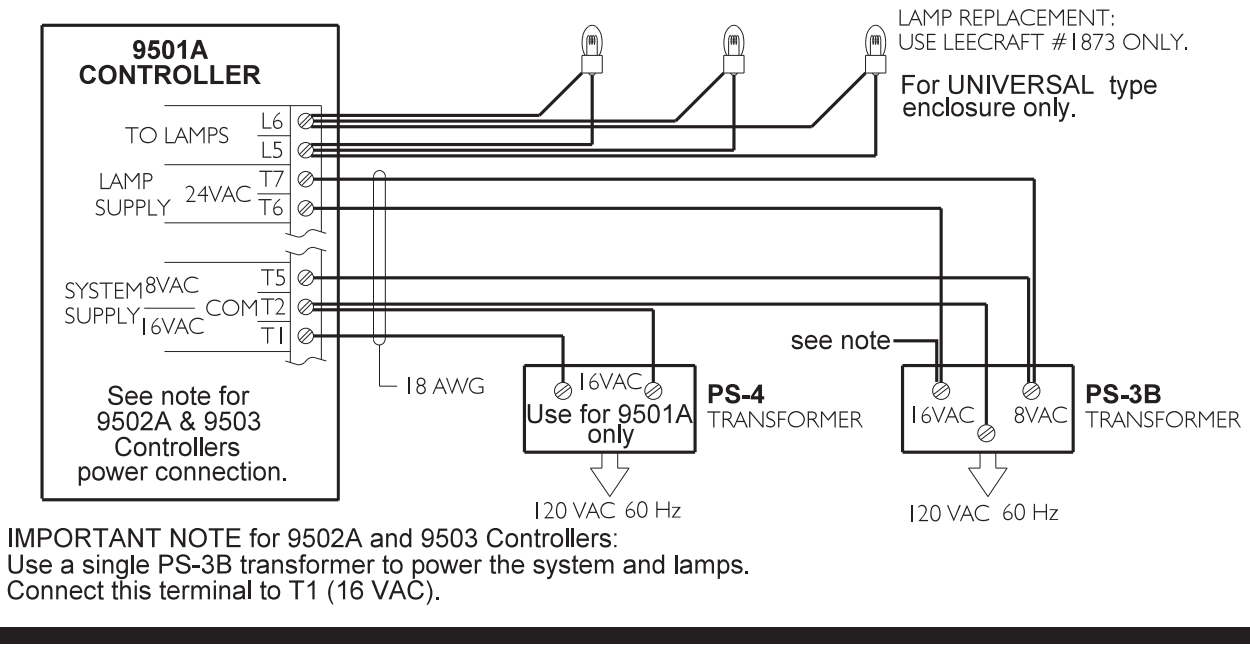
FIG. 12: RELAY CONTACTS WIRING



WIRING THE SYSTEM and LAMP SUPPLIES

Wire as shown in FIG. 13.

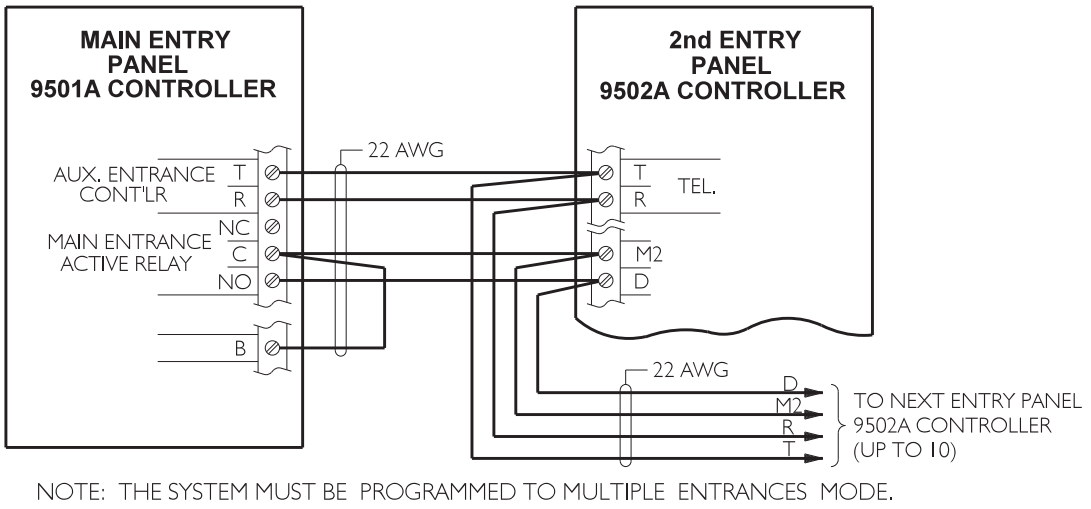
FIG. 13: SYSTEM and LAMP SUPPLY



WIRING INSTRUCTION FOR MULTIPLE ENTRANCES APPLICATION

Wire as shown in FIG. 14.

FIG. 14: MULTIPLE ENTRANCES WIRING

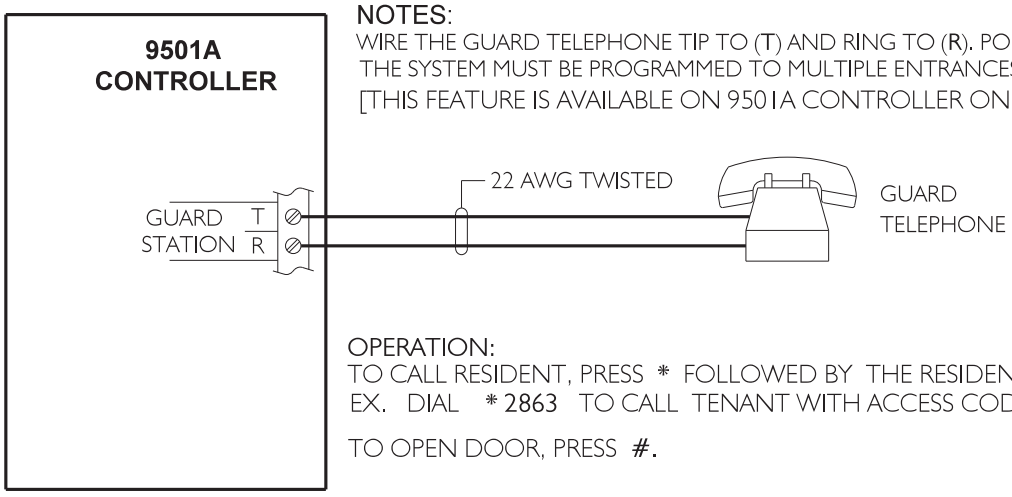


NOTE: THE SYSTEM MUST BE PROGRAMMED TO MULTIPLE ENTRANCES MODE.

WIRING THE GUARD TELEPHONE TO 9501A CONTROLLER

Wire as shown in FIG. 15.

FIG. 15: GUARD TELEPHONE WIRING



NOTES:
WIRE THE GUARD TELEPHONE TIP TO (T) AND RING TO (R). POLARITY IS IMPORTANT.
THE SYSTEM MUST BE PROGRAMMED TO MULTIPLE ENTRANCES MODE.
[THIS FEATURE IS AVAILABLE ON 9501A CONTROLLER ONLY.]

OPERATION:
TO CALL RESIDENT, PRESS * FOLLOWED BY THE RESIDENT/TENANTCODE.
EX. DIAL * 2863 TO CALL TENANT WITH ACCESS CODE NUMBER 2863.

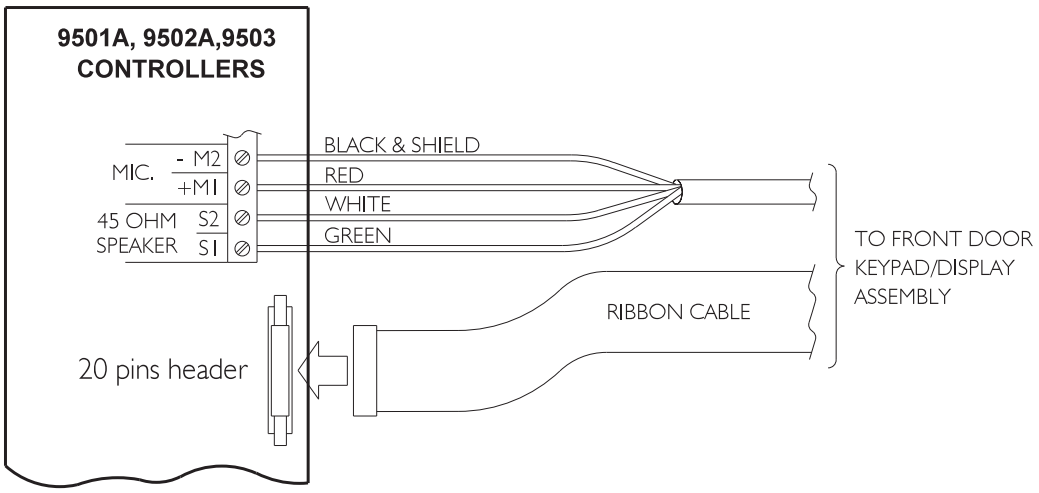
TO OPEN DOOR, PRESS #.

OPERATION FOR INSTALLERS:
TO ACTIVATE A PARTICULAR RELAY LINE , PRESS ANY NUMBER FOLLOWED BY A RELAY LINE NUMBER.
SEE APPENDICES D-1 & D-2 FOR INFORMATION.

WIRING THE SPEAKER, MIC., and KEYPAD/DISPLAY ASSEMBLY TO 9501A, 9502A, or 9503 (Controllers)

Wire as shown in FIG. 16.

FIG. 16: SPK., MIC., KEYPAD/DISPLAY ASSEMBLY WIRING



WIRING TO EARTH GROUND

Although the electronics of the 9500 Series System are not Earth Grounded, it is absolutely vital to have good solid **Earth Grounding** connections to each enclosure; that is, a **separate** (do not rely on the Relay Control Wire shields to provide this Earth Ground) ground bonding wire (preferably at least 14 AWG) that is run to the **NEAREST confirmed** building electrical system ground, or cold water pipe. This is **required** on the 9501A, 9502A, and 9503 Lobby Panel Enclosures, and the Decoder / Relay Cabinet(s). Newer enclosures will have a clearly marked screw connection on the back marked **"CHASSIS GROUND"**. Older enclosures may be Earth Grounded via a mounting screw if the enclosure metal under the screw is sanded clean of paint to ensure a good electrical connection.

The Relay Control Wires (see Fig.5) use 4-conductor shielded cable. At each wiring point (9501A and each MD-342 Relay Mother Board) the cable shields are connected to the same Earth Ground as the enclosure. This Earth Ground **MUST NOT** be connected to any of the four Relay Control Wires (Data, Clock, Latch, Com) themselves.

NOTE: IF PROPER GROUNDING REQUIREMENTS ARE NOT FOLLOWED AS OUTLINED, REPAIRS MAY NOT BE COVERED BY WARRANTY.

WIRING THE DEDICATED TELEPHONE LINE

Connect the "Outside Line" modular jack to a touch tone (DTMF) type telephone line by using the supplied telephone cord. The "Outside Line" modular jack is located on the upper-left corner of the 9501A main controller board. The outside line is used by the system to autodial up to 11-digit telephone number through the telephone network.

POWERING THE SYSTEM

Before powering the system, double check all the connections. When all connections are checked, power the system up and observe the system display. If necessary, adjust the contrast as described in the Display Contrast Adjustment section.

ELEVATOR RECALL (RESTRICTION) FEATURE

GENERAL OPERATION

Elevator-Recall (Restriction) is now a standard feature which has been implemented in the 9501A/NSL system. The feature operates as such: a visitor calls a resident, is then allowed entrance at which point the entry door is opened and the floor relay is activated. When the visitor gets on the elevator, he can only access the floor of the resident. This feature is supported from both the Lobby as well as remote door points-of-access. The feature operates by allowing the installer to (indirectly) associate the first two digits of the Resident/Tenant Code which a visitor would enter on the lobby keypad (i.e. when trying to call a Resident Suite), with an elevator recall (restriction) relay number. This reserved relay will be activated only after a Resident makes the decision to allow the visitor access to the building (i.e. when the Resident presses the digit which has been programmed to activate the main/remote door latch), so that the main/remote door latch and elevator recall relay are activated at the same time and for the same length of time. We suggest a separate timer be used for each elevator floor relay.

The first two digits of the Resident/Tenant Code allow for a (theoretical) range from 01-95 relays to be reserved for this purpose. For example, the code “1201" and “1215' would both activate the same reserved relay. For the purposes of the Elevator-Recall (Restriction) functionality, it is assumed that both Resident/Tenant Codes (i.e. 1201 and 1215) would be assigned to Residents on the same (i.e. 12th) floor. Thus, a maximum of 95 possible relays (each assigned to a separate floor) can be accessed in this manner.

These elevator recall (restriction) relays can only be allocated from the last relay-cabinet in the NSL system (the maximum number of relay cabinets is 16). If sixteen relay cabinets are not used, but Elevator-Recall (Restriction) is required, then jumper the last relay cabinet (whatever it may be i.e. the fifth, sixth etc.) as if it were the sixteenth cabinet. The jumper is placed in the 16th location, refer to Figure 6 for location. The very last relay in this cabinet is however NOT available, as it is always reserved for use by the 9501A system.

NOTE: To have Elevator-Recall Restriction use Model 9512E Elevator-Recall Cards mounted in a 9508 8 Relay Card Cabinet.

Elevator-Recall (Restriction) is available with single and multiple entrances and are programmed accordingly.

1. SINGLE ENTRANCE - ELEVATOR-Recall (Restriction)

At the 9501A, relays are programmed to activate in association with a specific Resident/Tenant Code. Refer to Appendix D-1 and Programming Instructions in this manual. Only the relays in the last relay cabinet may be programmed as Elevator-Recall (Restriction) relays.

For example: A single entrance system consists of a 9501A and 3 relay cabinets. The last relay cabinet may be used as Elevator-Recall (Restriction) relays using the Model 9512E Elevator-Recall Cards (maximum 8 cards in the cabinet). Therefore it is recommended to associate all residents on the same floor with one Elevator-Recall (Restriction) relay. Sample programming at the 9501A would be as such:

Resident/Tenant Code	Elevator-Recall (Restriction) Relay (the last relay cabinet)
1201	12
1202	12
1203	12
1301	13

Looking at the information above, the first two digits of the Resident/Tenant Code represents the resident’s floor. Therefore all residents on the twelfth floor activate the same Elevator-Recall (Restriction) relay number 12 on the first relay Model 9512E Elevator-Recall Relay Card in the last relay cabinet.

2. MULTIPLE ENTRANCES - ELEVATOR-RECALL (RESTRICTION)

For systems with more than one entrance, the 9502A must be programmed for the Elevator-Recall (Restriction) application.

NOTE: A 9502A IS USED FOR MULTIPLE POINTS OF ENTRY. ONE 9502A IS REQUIRED FOR EACH ENTRANCE IN ADDITION TO THE MAIN LOBBY ENTRANCE.

The UNIT-ID code is a number which is programmed with each REMOTE 9502A system and can range from 0-9. When the 9502A is to be used in an Elevator-Recall (Restriction) application, a value of **1 to 8 (representing relay card 1 to 8 in the last relay cabinet)** must be programmed. A 9502A programmed with a value of either **0 or 9** will be excluded from the Elevator-Recall (Restriction) functionality. The UNIT-ID value for the (base) 9501A system is **NOT** programmable and always has a value of **1**.

The method for association between the first two digits of the Resident/Tenant Code and the actual relay number is outlined here for use with a 9502A:

1. At the 9502A, the UNIT-ID identifies which **relay card number** (1 through 8 with 12 relays per card) in cabinet 16 (or the last cabinet), will be the **starting** address for the Elevator Restriction relays.
2 The UNIT-ID also identifies (0 or 9) that a particular 9502A unit is to be excluded from the Elevator-Recall (Restriction) feature (Default/Normal operation).
3. In order for the 9501A to know what Resident/Tenant Code has been entered from a Remote (9502A) keypad, it is necessary that the programmed relay numbers **match exactly** the programmed Resident/Tenant Codes (specific to that particular 9502A panel). For example:

At the 9502A		At the 9501A	
Resident/Tenant Code	Relay Code	Resident/Tenant Code	Relay Code
0107	0107	0107	0000
0202	0202	0202	0001

EXAMPLES:

a) **Exclude REMOTE (9502A) panel from Elevator-Recall (Restriction) feature:**

Program the 9502A with a Unit-ID code of 0 or 9.

Program the 9502A with Resident/Tenant Codes and relay numbers that were programmed at the 9501A. In this instance the 9502A will send the specific relay number to the 9501A to activate and ensure a connection to this particular Resident Suite.

When the 9501A sees a UNIT-ID code of 0 or 9, it will take the relay number sent by the 9502A and activate the connection. At the end of the call, the last relay in cabinet 16 will be activated (Default/Normal operation).

b) **Include REMOTE (9502A) panel in Elevator-Recall (Restriction) feature:**

Program the 9502A with a UNIT-ID code of 1 to 8, depending on the desired starting **relay card number**.

Program the 9502A with Resident/Tenant Codes used at the 9501A and input the same Resident/Tenant Code number under the Relay # heading. For example: if the Resident/Tenant Code is 0107 then the Relay# is 0107 also at the 9502A. The 9501A Resident/Tenant Codes and the 9502A Resident/Tenant Codes and Relay numbers at the 9502A should be identical.

When the 9501A “sees” a UNIT-ID code of 1 through 8, it will take the relay number sent by the 9502A and perform a “lookup” on the (local) 9501A programmed Resident database in order to resolve the actual relay number to be activated. At the end of this call, the specific Elevator-Recall (Restriction) relay will then be activated.

EXAMPLES:

If a 9502A is programmed with a UNIT- ID = 1 and a Resident/Tenant Code of “1215" is entered on the

keypad at the entrance (on the 9501A), then the Elevator-Recall (Restriction) relay number **12** (twelfth relay on card number 1) in the last cabinet will be activated. If the Resident/Code is 1515, then the relay number **15** (third relay on card number 2) will be activated.

If a 9502A is programmed with a UNIT-ID =3 and a Resident code of "1215" is entered (remote), then the Elevator-Recall (Restriction) relay number **36** (twelfth relay on card number 3) in the last cabinet will be activated. If the Resident/Code is 1515, then the relay number **39** (third relay on card number 4) will be activated.

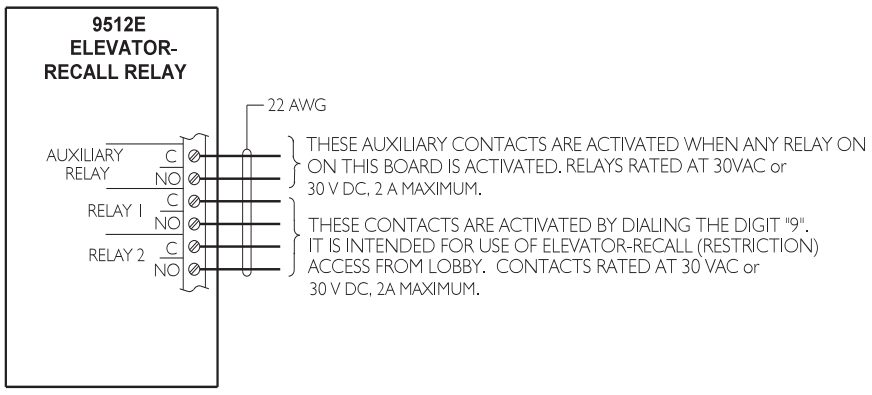
9502A	**9512E RELAY CARDS IN LAST RELAY CABINET**
UNIT-ID 1	***Relay Card Number 1*** (Relay number 1 to 12)
UNIT-ID 2	***Relay Card Number 2*** (Relay number 13 to 24)
UNIT-ID 3	***Relay Card Number 3*** (Relay number 25 to 36)
UNIT-ID 4	***Relay Card Number 4*** (Relay number 37 to 48)
UNIT-ID 5	***Relay Card Number 5*** (Relay number 49 to 60)
UNIT-ID 6	***Relay Card Number 6*** (Relay number 61 to 72)
UNIT-ID 7	***Relay Card Number 7*** (Relay number 73 to 84)
UNIT-ID 8	***Relay Card Number 8*** (Relay number 85 to 95) **LAST RELAY NOT USED**

NOTES: FIRST TWO DIGITS OF THE RESIDENT/TENANT CODE REPRESENTS THE ELEVATOR-RECALL (RESTRICTION) RELAY NUMBER.
WHEN USING ELEVATOR-RECALL (RESTRICTION) IT IS NECESSARY TO USE A SEPARATE TIMER FOR EACH OF THE FLOOR RELAYS.

WIRING THE 9512E ELEVATOR-RECALL RELAY CARD

The 9512E Elevator-Recall Relay Card provides Common (C) and Normally Open (NC) contacts marked on the board silkscreen. The very first relay marked Aux Rly is an auxiliary relay which is activated any time another relay on the board is activated. The relays available for Elevator-Recall (Restriction) are labelled Relay 1 to Relay 12. Wiring is achieved at the terminal block which is removable for easy installation.

FIGURE 17: MODEL 9512E ELEVATOR-RECALL RELAY CARD WIRING



PROGRAMMING INSTRUCTIONS: SCROLLING DIRECTORY

Before programming the system, obtain the required information by using the forms provided in APPENDICES "D-1 and D-2". Some information may be found on APPENDICES "B-1 and B-2".

The following programming information pertains to both the 9501A and the 9502A unless otherwise specified.

After the system initializations (power up), the display should appear as shown below.

```
     <  MIRCOM  >
  Enter Resident Code
   to view directory
press  * UP    # DOWN
```

This is the **Normal Mode** of the system. The system will accept all valid Access Codes by entering them directly on the keypad. Use the ***** or # key to scroll "up or down" the resident directory list. Pressing the ***** or # key momentarily will scroll "up or down" the directory list one name at a time. Holding the ***** or # key will scroll "up or down" continuously and stop scrolling when the key is released.

Before entering the *Programming Mode* for the first time, it is recommended to restore the factory default Master Code ***999** by shorting the reset pins for approximately 3 seconds. Please see page 34, Fig. 18 for reset pins location.
Note: *Shorting the reset pins will only restore the factory default Master Code* ***999** *and* ***will not affect*** *any programmed information.*

ENTERING PROGRAMMING MODE

While in the Normal Mode, press "**0**" then enter the **MASTER CODE** (factory default is ***999**) to enter the PROGRAMMING MODE.

Pressing "**0**", the screen should appear ...

```
     <  MIRCOM  >
***** _ _ _ _ *****
*******************
-Keyless Entry Mode-
```

Pressing "*****", the next screen should appear...

```
     <  MIRCOM  >
***** * _ _ _ *****
*******************
-Program Code Entry
```

Enter Master Code (default is **999**), the next screen should appear...

```
     <  MIRCOM  >
     PROGRAM MODE
    -Please  Wait-
  -Program Code Entry-
```

for a few seconds, then the screen should change to...

```
<<< PROGRAM MODE >>>
   Enter the three
  digit program code
[Use *888 for Menu]
```

This is the PROGRAM MODE menu. At this stage, the system is waiting for valid programming code.

Important note: Before programming the system for the first time, it is recommended to clear the memory and restore all factory defaults by using a special command ***5*5** while in the Program Mode menu . Since this special command **(*5*5)** is a destructive command which can erase all the programmed information without the provision to undo, the user must take precaution when using this command.

There are two ways to program the system.

1. By using ***888** for Menu Driven type of programming.

2. By using the Direct Access Programming Codes for manual programming. Entering these codes will lead the user directly to the desired function. The Direct Access Programming Codes are listed in the table below.

Code	Function	Factory Default	Program	Choices
*000	Exit Programming Mode	*000	n/a	NONE
*101	Enter Resident/Tenant Codes and Relay Numbers	Blank	See worksheet	4 digit resident code and 4 digit relay number
*202	Review Resident/Tenant Codes, Relay Numbers and Resident/Tenant Names	Blank	See worksheet	Up to 23 digits to review or delete 4 + 4 +15
*303	Enter Keyless Entry Codes	Blank	See worksheet	4 digits
*404	Review Keyless Entry Codes	Blank	See worksheet	4 digit code to review or delete
*505	Change Master Code	*999	*___ ___ ___	3 digits
*606	Change Number of Ring Cycles	6 cycles	___ ___ cycles	2 digits
*707	Set Door Open Timer	10 seconds	___ ___ seconds	2 digits
*808	Set On Line Timer	60 seconds	___ ___ seconds	2 digits
*909	Select MULTIPLE/SINGLE Entrance	Multi (00)	___ ___	00 Multi or 11 Single (2 digits)
*111	Enter 1st 11-digit Telephone Number	Blank	(_) _ _ _ _ _ _ _ _ _ _	4-digit area code and 7 digit telephone number
*222	Enter 2nd 11-digit Telephone Number	Blank	(_) _ _ _ _ _ _ _ _ _ _	4-digit area code and 7 digit telephone number
*333	Auto Programming Residents'/Tenants' Dial Codes	None	Qty_ _ _ Code:_ _ _ _	3-digit maximum resident capacity 4-digit starting point for resident codes
*777	Select Digit for Hold	3	__	1, 2 or 3

"NO MANUAL" MENU DRIVEN PROGRAMMING USING *888

While in the programming mode, enter the "***888**" to gain access to the programming menu. After entering *888, the screen should appear...

```
[1=Bck]    [3=Fwd]
Welcome to the NSL
On-Line Help Menu!
[*=Abort]   [#=Yes]
```

1 and **3** keys are for scrolling backward or forward the feature menus.
to access the displayed feature.
***** to quit, exit, cancel or abort.

Press **3** for the next menu. The screen should appear...

```
[1=Bck]      [3=Fwd]
Do you want to exit
from PROGRAM Mode?
[*=Abort]    [#=Yes]
```

1 inactive key
3 key to the first feature menu.
key to exit to Normal Mode.
***** key to Programming Mode menu

Note: *Repeat the above scrolling process (i.e. pressing keypad 3) to locate the desired feature. To exit to Normal Mode, enter ***000** while in the PROGRAM MODE menu.*

Press **3** again for the next menu.

MANUAL ENTRY OF RESIDENTS'/TENANTS' DIAL CODES and RELAY

Residents'/Tenants' *Dial Codes* and *Relay* # can be entered in the format of 1, 2, 3, or 4 digits (less than 4 digits must be preceded by 0's). These codes are used to call the residents using the Entry Panel's keypad. Use the information given on APPENDICES "D-1 and D-2" to program the Residents'/Tenants' *Dial Codes* and *Relay* #.

To enter codes manually, scroll through until you reach the feature as shown below.

```
[1=Bck]       [3=Fwd]
Do you want to enter
  TENANT   Codes ?
[*=Abort]     [#=Yes]
```

Press # to access feature. The screen should display...

```
-Program  Options-
Code         Relay#
_ _ _ _      _ _ _ _
Please enter choice:
```

```
Enter: 000x    for one (1) digit dial code
Enter: 00xx    for two (2) digits dial code
Enter: 0xxx    for three (3) digits dial code
Enter: xxxx    for four (4) digits dial code
To call a resident with two digits dial codes, simply enter xx
Where: 0 - Zero,  x - Resident Dial Code (digit 0 to 9)
```

Enter Resident/Tenant Dial Code and Relay/Line number as per APPENDICES D-1and D-2. When you make a mistake and wish to re-enter the code, press ***** to enter code again. After entering the Code and Relay number, the next screen should display...

```
 -Program  Options-
* = Abort, # = Store
 xxxx          xxxx
```

```
Please enter choice:
```

Press # to Store or ***** to abort entry. Repeat this process until all codes are entered. When finished, press ***** to return to PROGRAM MODE menu. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

NOTE: IF ELEVATOR-RECALL (RESTRICTION) IS TO BE USED, PLEASE DESIGNATE FIRST TWO DIGITS OF RESIDENT'S CODE AS THE RESIDENT'S FLOOR NUMBER. FOR EXAMPLE: A RESIDENT LIVES ON THE SEVENTH FLOOR, THEIR RESIDENT CODE SHOULD BE 07XX WHERE XX IS A NUMERIC NUMBER (01 TO 95) OF YOUR CHOICE. PLEASE REFER TO THE ELEVATOR-RECALL (RESTRICTION) SECTION IN THIS MANUAL FOR FURTHER INFORMATION.

ENTRY, REVIEW, EDIT or DELETE DIAL CODES AND RESIDENTS'/TENANTS' NAMES

To enter, review, edit or delete *Dial Codes* and *Resident /Tenant Names*, scroll through until you reach the feature as shown below.

```
[1=Bck]       [3=Fwd]
 Do you want to edit
    TENANT Names ?
[*=Abort]     [#=Yes]
```

Press # to access the feature. The display should appear...

```
====TOP-OF-LIST=====
xxxx:                    <==   Second line with ":" displayed can
xxxx                     be selected by pressing  "0".
xxxx                     Where: xxxx are the Dial Codes.
                         Note: Press any number to exit.
```

Press ***** or # to scroll (review) "up or down" the list . To enter,edit, and delete the resident/tenant name, scroll until the desired Access Code and Resident/Tenant Name is in the second line of the display.

Press "**0**" to enter, edit or delete *Dial Code* and *Resident /Tenant Name*. The next screen should appear....

```
  -Program  Options-
CODE:xxxx  Relay:xxxx
NAME:xxxxxxxxxxxxxxx
Please enter choice:
```

1and **3** to scroll "up or down" the character set. Character Set table is given on Appendix E.
7and **9** to move the cursor "left or right".
to **delete** the displayed Dial Code and Resident Name.
CAUTION!: *Deleting a Dial Code and Resident Name will also delete the corresponding Relay #.*

After entering resident/tenant name, press ***** . The next screen should appear...

```
  -Program  Options-
* = Abort,  # = Store
Name:xxxxxxxxxxxxxxx
Please enter choice:
```

Press * to abort or # to store entry. Repeat the above process until all residents' names are entered. When finished, press ***** to return to PROGRAM MODE menu. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

AUTO PROGRAMMING RESIDENTS'/TENANTS' DIAL CODES

This feature is provided to allow the user to program the Dial Codes automatically. In addition, the user can specify the "quantity" (number of codes) and "access codes start number" for quick installation.

Scroll through until you reach the feature as shown below.

```
[1=Bck]       [3=Fwd]
Do you want to AUTO-
   PROGRAM Codes ?
[*=Abort]     [#=Yes]
```

Press # to access the feature. The display should appear...

```
    -Program  Options-
Quantity:  _ _ _  (<xxx)   <----where: xxx is the maximum resident capacity
Codes start at: _ _ _ _    <----4 digits access codes
  Please enter choice:
```

CAUTION!: *Using Auto Program will replace all those previously programmed codes.*

Enter the desired "quantity" (number of codes) and "start number" for Dial Codes. The system should automatically program the codes incrementally by one (1). Please note that the Relay/Line Number will always start at **0000**. For example, the start number is 1500, the data stored in the memory should be as shown below.

Code	***Relay number***
1500	***0000***
1501	***0001***
1502	***0002***

etc.

While the system is programming, the message will appear...

```
Now PROGRAMING!
 - Please Wait-
```

When finished, the system should exit to the PROGRAM MODE menu. To quit, enter ***000** to return to NORMAL MODE.

PROGRAMMING KEYLESS ENTRY CODES

The system can provide up to 1000 Keyless Entry Codes for residents and 5 spares for building management. The Keyless Entry Codes allow authorized residents/tenants to enter a code directly at the keypad to release the door without the necessity of calling the resident. For obvious reasons, keyless entry codes should be kept well guarded and controlled.

[***Operation:*** *press "**0**" followed by the four digit Keyless Entry Code*]

To enter Keyless Entry Codes, scroll through until you reach the feature as shown below.

```
[1=Bck]       [3=Fwd]
Do you want to enter
   KEYLESS Codes ?
[*=Abort]     [#=Yes]
```

Press # to access the feature. The display should appear...

```
-Program  Options-
   KEYLESS Entry
   Code #_ _ _ _
Please enter choice:
```

Enter the four digits Keyless Entry Code. If you make a mistake or wish to re-enter the code, press ***** to enter code again. The next display should change to...

```
-Program  Options-
* = Abort,  # = Store
   Code # x x x x
Please enter choice:
```

Press * to abort or # to store entry. Repeat this process until all codes are entered. We recommend not to use the same keyless entry code. Press any number from 1-9 to exit to PROGRAM MODE menu when finished. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

REVIEW AND DELETE KEYLESS ENTRY CODES

To review and delete Keyless Entry Codes, scroll through until you reach the feature as shown below.

```
[1=Bck]      [3=Fwd]
Do you want to edit
  KEYLESS Codes ?
[*=Abort]    [#=Yes]
```

Press # to access the feature. The display should appear...

```
-Program  Options-
  Code To Review
     # _ _ _ _
Please  enter choice:
```

Enter the Keyless Entry Code to review or delete. The next display should appear...

```
-Program  Options-
   KEYLESS Entry
   Code # x x x x
Please enter choice:
```

Press **1** or **3** to scroll (review) "up or down" the list. To **delete** the displayed code, press #.

When finished, press ***** to exit to PROGRAM MODE menu for programming other functions. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

REPROGRAMMING MASTER CODE

Master Code (factory default is ***999)** may be changed to any desired three (3) digits code number. Since this code is used to access all levels of programming, it would be a good idea to change the code to one that will be known only by the installer or management personnel. Please enter the new Master Code in the space provided below for future reference.

New Master Code: _____ Date: _____

To change the MASTER CODE, scroll through until you reach the feature as shown below.

```
[1=Bck]      [3=Fwd]
 Do you want to edit
  the MASTER Code ?
[*=Abort]    [#=Yes]
```

Press # to access the feature. The display should appear...

```
 -Program  Options-
    MASTER Code
      *_ _ _
Please enter choice:
```

Enter the New Master Code.Please do not use ***888** for Master Code.The next display should appear.

```
 -Program Options-
* = Abort, # = Store
      * x x x
Please enter choice:
```

Press ***** to abort or # to store entry. The next display should appear...

```
 -Program  Options-
    Press    *
      To exit
Please enter choice:
```

Press ***** to exit to PROGRAM MODE menu. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

Note: To restore factory default Master Code, please see FIG. 18 for location of reset pins.

SET DOOR TIMER

To change Door-Open Timer (factory default is 10 seconds), scroll through until you reach the feature as shown below.

```
[1=Bck]       [3=Fwd]
 Do you want to edit
 the Door-Open Timer?
[*=Abort]     [#=Yes]
```

Press # to access the feature. The display should appear...

```
-Program  Options-
Door-Open Timer
00 to 99 Sec.  x x        <----99 seconds max.
Please enter choice:
```

Enter the desired door-open period. The next display should appear...

```
 -Program  Options-
* = Abort, # = Store
00 to 99 Sec.  x x
 Please enter choice:
```

Press ***** to abort or # to store entry. To quit, enter ***000** while at the PROGRAM MODE menu to return to NORMAL MODE.

ELEVATOR-RECALL RESTRICTION (9502A ONLY)

The system can provide elevator-recall (restriction). Scroll down to the following feature.

```
[1=Bck]       [3=Fwd]
    Do you want to edit
 Elevator-Recall ID?
[*=Abort]     [#=Yes]
```

Press # to edit. The menu should appear ...

```
-Program  Options-
     Elevator-Relay
 Card 1-8, 9-0   0
  Please enter choice:
```

Enter one digit 1 to 8 for Elevator Restriction feature. Enter 0 or 9 for normal operation without elevator-recall (restriction). For more information see the Elevator-Recall (Restriction) section in this manual.

SET ON-LINE TIMER (9501A only)

To change the On-Line period (factory default is 60 seconds), scroll through until you reach the feature as shown below.

```
[1=Bck]       [3=Fwd]
 Do you want to edit
  the On-Line Timer?
[*=Abort]     [#=Yes]
```

Press # to access the feature. The display should appear...

```
-Program  Options-
On-Line Timer
00 To 99 Sec.  _ _          <----99 seconds max.
Please enter choice:
```

Enter the On-Line period. The next display should appear...

```
 -Program  Options-
* = Abort, # = Store
 00 To 99 Sec.  x x
Please enter choice:
```

Press ***** to abort or # to store entry. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

MULTIPLE / SINGLE ENTRANCE SELECT (9501A only)

To select Multiple or Single entrance (factory default is single entrance), scroll through until you reach the feature as shown below.

```
[1=Bck]      [3=Fwd]
 Do you want to edit
Single/Multi option?
[*=Abort]    [#=Yes]
```

Press # to access the feature. The display should appear...

```
 -Program  Options-
  Multi or Single
 M=00   S=11   _ _
Please enter choice:
```

Enter **00** for multiple entrances or **11** for single entrance. The next display should appear...

```
 -Program  Options-
* = Abort, # = Store
 M=00   S=11   x x
Please enter choice:
```

Press # to store or ***** to abort entry. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

RING CYCLE SELECT (9501A only)

To change the number of Ring Cycles (factory default is 6 cycles), scroll through until you reach the feature as shown below.

```
[1=Bck]       [3=Fwd]
 Do you want to edit
  the Ring cycles ?
[*=Abort]     [#=Yes]
```

Press # to access the feature. The display should appear...

```
-Program  Options-
# RING Cycles
00 To 99 Cycl.  _ _        <----99 cycles max.
Please enter choice:
```

Enter the number of ring cycles. The next display should appear...

```
 -Program  Options-
* = Abort, # = Store
 00 To 99 Cycl.  x x
Please enter choice:
```

Press ***** to abort or # store entry. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

SET CLOCK (NOT AVAILABLE - DO NOT USE)

To set the clock, scroll through until you reach the feature as shown below.

```
[1=Bck]       [3=Fwd]
 Do you want to set
 the Time-of -Day ?
[*=Abort]     [#=Yes]
```

Press # to access the feature. The display should appear...

```
-Program  Options-
Hr    Mn   Sc
_ _ : _ _ : _ _          <----Hour : Minute : Second
Please enter choice:
```

Enter the Time-of-Day. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

TWO 11-DIGITS TELEPHONE NUMBER ENTRY (9501A)

The system has a built-in Dedicated Telephone Jack that can be connected to a standard residential jack (RJ-11/CA-11). The user can program two (up to 11-digit) telephone numbers that can be auto-dial through the telephone network. Each telephone number has its own dial code. To take advantage of this unique feature, a touch tone (DTMF) line is required.

To enter the **FIRST** 11-digit telephone number, scroll through until you reach the feature as shown below.

```
[1=Bck]       [3=Fwd]
 Do you want to set
the 1st 11-digit # ?
[*=Abort]     [#=Yes]
```

Press # to access the feature. The display should appear...

```
-Program  Options-
(1)   Code: _ _ _ _
_ - _ _ _ - _ _ _ - _ _ _ _      <----up to 11 digits telephone number
Please enter choice:
```

Enter Dial Code and telephone number. If less than 11 digits are required, simply press # to blank the remaining digit(s). When you make a mistake and wish to re-enter the code, press ***** to enter code again. After entering the telephone number, the display should appear...

```
-Program  Options-
* = Abort, # = Store
x - x x x - x x x - x x x x
Please enter choice:
```

Press ***** to abort or # to store entry. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

To enter the **SECOND** 11-digit telephone number, scroll through until you reach the feature as shown below.

```
[1=Bck]       [3=Fwd]
 Do you want to set
the 2nd 11-digit # ?
[*=Abort]     [#=Yes]
```

Press # to access the feature. The display should appear...

```
-Program  Options-
(2)   Code: _ _ _ _
_ - _ _ _ - _ _ _ - _ _ _ _      <----up to 11 digits telephone number
Please enter choice:
```

Enter Dial Code and telephone number. If less than 11 digits are required, simply press # to blank the remaining digit(s). When you make a mistake and wish to re-enter the code, press ***** to enter code again. After entering the telephone number, the display should appear...

```
-Program  Options-
* = Abort, # = Store
x - x x x - x x x - x x x x
Please enter choice:
```

Press ***** to abort or # to store entry. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

RING PATTERN SELECT (9501A only)

The system allows the user to adjust the ringing pattern as required. Factory default is set to a distinct ringing pattern. Normal or Standard North American ringing pattern can be selected for applications where ringing pattern is critical; especially for older answering machines that only accept normal ringing pattern.
To change the ringing pattern, scroll through until you reach the feature as shown below.

```
[1=Bck]       [3=Fwd]
 Do you want to edit
  ringing-pattern ?
[*=Abort]     [#=Yes]
```

Press # to access the feature. The display should appear...

```
-Program  Options-
Distinct/Normal
D=15    N=38   _ _      <---- 38 for North American ringing pattern
Please enter choice:
```

Enter **15** for Mircom's distinct ringing pattern or **38** for Normal or Standard North American ringing pattern. Enter any number for other desired ringing pattern. After entering the selection, the display should appear...

```
-Program  Options-
* = Abort, # = Store
 D=15    N=38   x x
Please enter choice:
```

Press ***** to abort or # to store entry. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

SORT RESIDENTS'/TENANTS' NAMES

To sort Residents'/Tenants' names, scroll through until you reach the feature as shown below.

```
[1=Bck]       [3=Fwd]
 Do you want to sort
  the tenant names ?
[*=Abort]     [#=Yes]
```

Press # to sort Residents'/Tenants' names. While the system is sorting names, the display should appear...

```
Sorting tenant List!
```

```
- Please Wait -
```

Sorting Residents'/Tenants' names may take a few minutes depending on the number of names to sort. The next screen should change to...

```
Performing copy ...
- Please Wait -
```

When finished, the system should exit to PROGRAM MODE menu. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

NOTE: Sorting cannot be performed with more than 600 names in a scrolling directory.

SELECT DIGIT FOR HOLD

To select the digit to put the caller on hold, scroll through until you reach the feature as shown below

```
[1=Bck]       [3=Fwd]
   Do you want to
   Program HOLD?
[*=Abort]     [#=Yes]
```

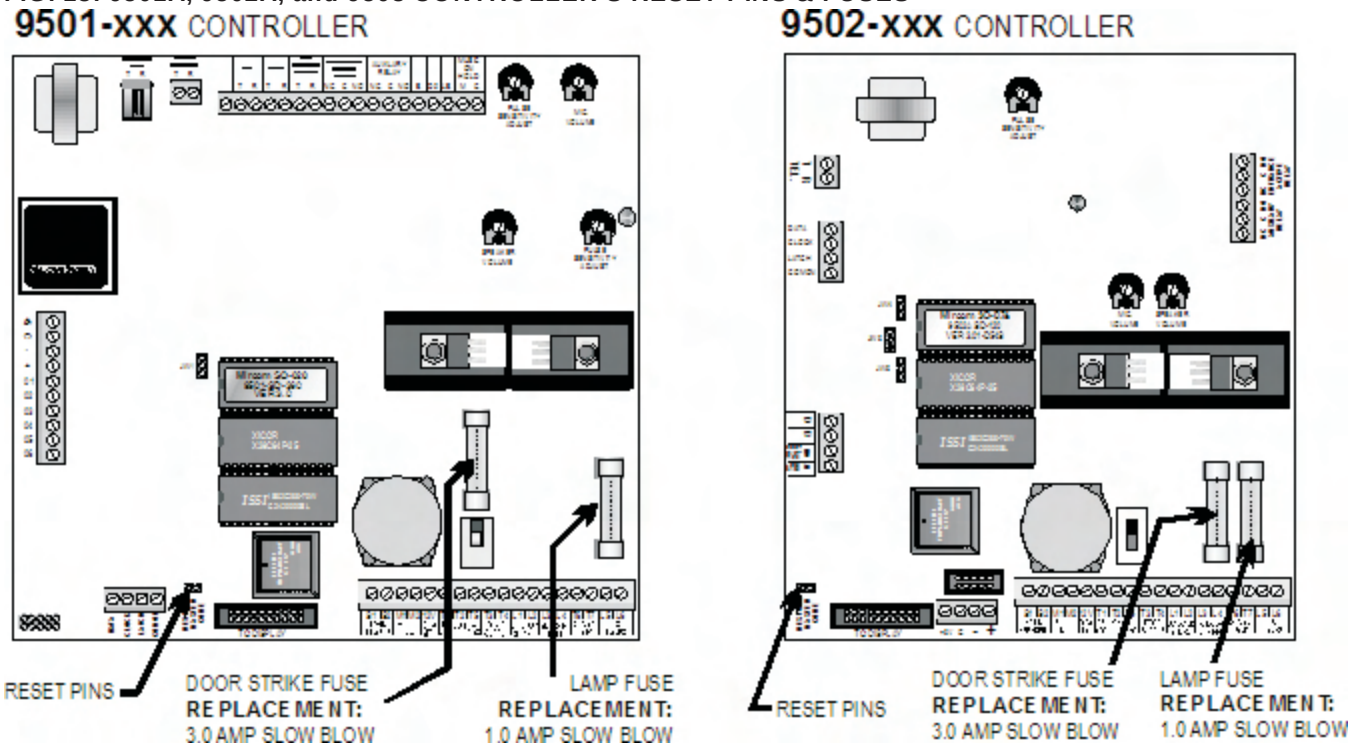
Press # to select hold digit. The display will be...

```
[1=Bck]       [3=Fwd]
   Hold on digit
   1,2, or 3 (_)
[*=Abort]     [#=Yes]
```

Type in the digit you require and then press # to store entry or * to abort. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

* * * * End of Programming * * * *

FIG. 18: 9501A, 9502A, and 9503 CONTROLLER'S RESET PINS & FUSES



PROGRAMMING INSTRUCTIONS: NON-SCROLLING DIRECTORY

Before programming the system, obtain the required information by using the forms provided in APPENDICES "D-1 and D-2". Some information may be found on APPENDICES "B-1 and B-2".

The following programming information pertains to both the 9501A and the 9502A unless otherwise specified

After the system initializations (power up), the display should appear as shown below.

```
<<< MIRCOM >>>
```

followed by...

```
Please enter the
Resident Code ...
```

This is the Normal Mode of the system. The system will accept all valid codes such as Access Codes, Keyless Entry Codes, and programming Master Code.

Before entering to Programming Mode for the first time, it is recommended to restore the factory default Master Code ***999** by shorting the reset pins for approximately 3 seconds. Please refer to Fig. 18 for location of reset pins.

NOTE: *Shorting the reset pins will only restore the factory default Master Code* ***999** *and* ***will not affect*** *any programmed information.*

ENTERING PROGRAMMING MODE

Enter the **MASTER CODE** (factory default is ***999**) to enable PROGRAMMING MODE.
The screen should appear ...

```
PROGRAM MODE
-  Please  Wait  -
```

for a few seconds and then the display should change to...

```
> PROGRAM MODE <
Enter code now, or *888 for help ...
```

This is the Program Mode Menu. At this stage, the system is waiting for valid programming code.

Important note:
Before programming the system for the first time, it is recommended to clear-up all memories and restore all factory defaults by using a special command ***5*5** while at Program Mode menu . Since this special command **(*5*5)** is a destructive command which can erase all the programmed information without the provision to undo, the user must take a precaution when using this command.

There are two ways to program the system.

1. By using ***888** for Menu Driven type of programming.

2. By using the Direct Access Programming Codes for manual programming. Entering these codes will lead the user directly to the desired function. The Direct Access Programming Codes are listed on the following table.

Code	Function	Factory Default	Program	Choices
*000	Exit Programming Mode	*000	n/a	NONE
*101	Enter Resident/Tenant Codes and Relay Numbers	Blank	See worksheet	4 digit resident code and 4 digit relay number
*202	Review Resident/Tenant Codes	Blank	See worksheet	Up to 4 digits to review or delete
*303	Enter Keyless Entry Codes	Blank	See worksheet	4 digits
*404	Review, Delete Keyless Entry Codes	Blank	See worksheet	4 digit code to review or delete
*505	Change Master Code	*999	*___ ___ ___	3 digits
*606	Change Number of Ring Cycles	6 cycles	___ ___ cycles	2 digits
*707	Select Door Open Timer	10 seconds	___ ___ seconds	2 digits
*808	Select On Line Timer	60 seconds	___ ___ seconds	2 digits
*909	Select MULTIPLE/SINGLE Entrance	Multi (00)	___ ___	00 Multi or 11 Single (2 digits)
*111	Enter 1st 11-digit Telephone Number	Blank	(_) _ _ _ _ _ _ _ _ _ _	4-digit area code and 7 digit telephone number
*222	Enter 2nd 11-digit Telephone Number	Blank	(_) _ _ _ _ _ _ _ _ _ _	4-digit area code and 7 digit telephone number
*333	Auto Programming Residents'/Tenants' Dial Codes	NONE	Qty:_ _ _ Code:_ _ _ _	3-digit maximum resident capacity 4-digit starting point for resident codes
*777	Select Digit for Hold	3	__	1, 2 or 3

"NO MANUAL" MENU DRIVEN PROGRAMMING USING *888

Enter " ***888** " to display a help menu.
The screen should appear...

```
1=Up  3=Down
#=Execute *= Quit
```

1 and **3** keys are for scrolling up or down the feature menus.
key is used to access the displayed feature.
***** key is used for quit, exit, cancel, or abort.

Press **3** for next menu. The screen should appear...

To Exit PROGRAM
MODE - Press #

At this menu, pressing * will lead you to the PROGRAM MODE menu. Pressing # will exit the PROGRAM MODE.

Press **3** again for next menu. The screen should lead you to the first feature menu.
NOTE: *Repeat the above process to locate the desired feature.*
*To exit to Normal Mode, enter ***000** while at PROGRAM MODE menu.*

MANUAL ENTRY OF RESIDENTS'/TENANTS' DIAL CODE AND RELAY

Residents'/Tenants' Dial Code can be entered in the format of 1, 2, 3, or 4 digit. These codes are used to call the residents using the Entry Panel's keypad. Use the information given on APPENDICES "D-1 and D-2" to program the residents' codes. To enter codes manually, scroll through until you reached the feature as shown below.

To Enter TENANT
Codes - Press #

Press # to access feature. The screen should display...

Code **Relay #**
_ _ _ _ _ _ _ _

Enter Dial Code and Relay/Line number. When you make a mistake and wish to reenter the code, press ***** to enter code again. After entering the Code and Relay number, the next screen should display...

#=Store, *=Abort
x x x x **x x x x**

for one (1) digit dial code
Enter: **00xx** for two (2) digits dial code
Enter: **0xxx** for three (3) digits dial code
Enter: **xxxx** for four (4) digits dial code
To call a resident with two digits dial codes, simply enter xx
Where: **0** - Zero, **x** - Resident Dial Code (digit 0 to 9)

Press # to Store or ***** to abort entry. Repeat this process until all codes are entered. When finished, press ***** to return to PROGRAM MODE menu. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

REVIEW AND DELETE RESIDENTS'/TENANTS' DIAL CODES

To review and delete the residents'/tenants' codes, scroll through until you reach the feature as shown below.

To Edit TENANT
Codes - Press #

Press # to access the feature. The display should appear...

Code to Review
_ _ _ _

Enter the code to review. The next display should appear...

Code **Relay #**
x x x x x x x x

Press **1** or **3** to scroll up or down the list. To **delete** the displayed code, press #.
CAUTION!: *Deleting a Code will also delete the assigned Relay #.*

When finished, press ***** to exit to PROGRAM MODE menu to select other features. To quit, press ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

AUTO PROGRAMMING THE RESIDENTS'/TENANTS' DIAL CODE

This feature is provided to allow the user to program the Dial Codes automatically. In addition, the user can specify the codes start number which enhances the flexibility compared to traditional MIRTEL 9000 series.
Scroll through until you reached the feature as shown below.

```
To Auto Program
Codes - Press #
```

Press # to access the feature. The display should appear...

```
Program Codes
from:  _ _ _ _
```

Enter the desired start number for DIAL CODES. The system should automatically program the codes incrementally by one (1). Please note that the Relay/Line Number will always start at 0000. For example, the start number is (say) 1500, the data stored in the memory should be as shown below.

Code	*Relay number*
1500	*0000*
1501	*0001*
1502	*0002*
	etc.

While the system is programming, the message will appear...

```
Now PROGRAMING!
-  Please   Wait  -
```

When finished, the system should exit to PROGRAM MODE menu. To quit, enter ***000** to return to NORMAL MODE.

PROGRAMMING THE KEYLESS ENTRY CODES

The system can provide up to 1000 Keyless Entry Codes for residents and 5 spares for building management. The Keyless Entry Codes allow authorized residents to enter a code directly at the keypad to release the door without the necessity of calling the resident/tenant. For obvious reasons, keyless entry codes should be kept well guarded and controlled. [***Operation:*** *press # followed by the four digits Keyless Entry Code*]

Scroll through until you reached the feature as shown below.

```
To Enter KEYLESS
Codes - Press #
```

Press # to access the feature. The display should appear...

```
KEYLESS Entry
Code #_ _ _ _
```

Enter the four digits Keyless Entry Code. If you make a mistake or wish to reenter the code, press ***** to enter code again. The next display should change to...

```
#=Store,  *=Abort
Code # x x x x
```

Press # to store or * to abort entry. Repeat this process until all codes are entered. Press ***** to exit to PROGRAM MODE menu when finished. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

REVIEW AND DELETE KEYLESS ENTRY CODES
To review and delete keyless entry codes, scroll through until you reach the feature as shown below.

To Edit KEYLESS
Codes - Press #

Press # to access feature. The display should appear...

Code To Review
_ _ _ _

Enter the Keyless Entry Code to review or delete. The next display should appear...

KEYLESS Entry
Code # x x x x

Press **1** or **3** to scroll up or down the list. To delete the displayed code, press #.

When finished, press ***** to exit to PROGRAM MODE menu for programming other functions. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

REPROGRAMMING MASTER CODE

Master Code (factory default ***999)** may be change to any desired three (3) digit code number. Since this code is used to access all levels of programming, it would be a good idea to change the code to one that will be known only by the installer or management personnel. Please enter the new Master Code in the space provided below for future reference.

New Master Code: _____ Date: _____

To change the MASTER CODE, scroll through until you reach the feature as shown below.

To Change MASTER
Code - Press #

Press # to access the feature. The display should appear...

MASTER CODE
***** _ _ _

Enter the New Master Code. Please do not use ***888** for Master Code.The next display should appear...

#=Store, *=Abort
***** x x x

Press # to store or ***** to abort entry. The next display should appear...

Press *
To exit

Press ***** to exit to PROGRAM MODE menu. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

NOTE: *To restore Master Code, please see FIG. 18 for location of reset pins.*

SET DOOR TIMER

To change Door-Open Timer (factory default is 10 seconds), Scroll through until you reach the feature as shown below.

```
Adjust Door-Open
Timer - Press #
```

Press **#** to access the feature. The display should appear...

```
Door-Open Timer
00 to 99 Sec.  _ _
```

Enter the desired door-open period. The next display should appear...

```
#=Store, *=Abort
00 to 99 Sec.  x x
```

Press **#** to store or ***** to abort entry. The next display should appear...

```
Press *
To exit
```

Press ***** to exit to PROGRAM MODE menu. To quit, enter ***000** wile at PROGRAM MODE menu to return to NORMAL MODE.

ELEVATOR-RECALL (RESTRICTION) (9502A ONLY)

The system can provide elevator recall (restriction). Scroll down to the following feature.

```
[1=Bck]       [3=Fwd]
    Do you want to edit
 Elevator-Recall ID?
[*=Abort]     [#=Yes]
```

Press # to edit. The menu should appear ...

```
-Program  Options-
     Elevator-Relay
 Card 1-8, 9-0   0
  Please enter choice:
```

Enter one digit 1 to 8 for Elevator-Recall (Restriction) feature. Enter 0 or 9 for normal operation without Elevator-Recall (Restriction). For more information see the Elevator-Recall (Restriction) section in this manual.

SET ON-LINE TIMER (9501A only)

To change the On-Line period, scroll through until you reached the feature as shown below.

```
Adjust On-Line
Timer - Press #
```

Press # to access the feature. The display should appear...

```
On-LINE Timer
00 To 99 Sec.  _ _
```

Enter the On-Line period. The next display should appear...

```
#=Store, *=Abort
00 To 99 Sec.  x x
```

Press # to store or ***** to abort entry. The next display should appear...

```
Press *
To Exit
```

Press ***** to exit to PROGRAM MODE menu. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

MULTIPLE/SINGLE ENTRANCE SELECT (9501A only)

To select Multiple or Single entrance, scroll through until you reach the feature as shown below.

```
Pick Multi/Single
Option - Press #
```

Press # to access the feature. The display should appear...

```
Multi or Single
M=00   S=11   _ _
```

Enter **00** for multiple entrances or **11** for single entrance. The next display should appear...

```
#=Store, *=Abort
M=00   S=11   x x
```

Press # to store or ***** to abort entry. The next display should appear...

```
Press *
To Exit
```

Press ***** to exit to PROGRAM MODE menu. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

RING CYCLE SELECT (9501A only)

To change the number of Ring Cycles, scroll through until you reached the feature as shown below.

```
Adjust # of Ring
Cycles - Press#
```

Press # to access the feature. The display should appear...

```
# RING Cycles
00 To 99 Cycl.  _ _
```

Enter the number of ring cycles. The next display should appear...

```
#=Store, *=Abort
00 To 99 Cycl.  x x
```

Press # to store or ***** exit entry. The next display should appear...

```
Press *
To Exit
```

Press ***** to exit to PROGRAM MODE menu. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

SET CLOCK (NOT AVAILABLE DO NOT USE)

To set the clock, scroll through until you reach the feature as shown below.

```
Set Time-of Day
Clock  -Press #
```

Press # to access the feature. The display should appear...

```
Hr    Mn   Sc
_ _ : _ _ : _ _          <----Hour : Minute : Second
```

Enter the Time-of-Day. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

TWO 11-DIGIT TELEPHONE NUMBER ENTRY(9501A only)

The system has a built-in Dedicated Telephone Jack that can be connected to a standard residential jacks (RJ-11/CA-11). The user can program two of up to 11-digit telephone numbers that can be auto-dial through the telephone network. Each telephone number has its own dial code. To take advantage of this unique feature, a touch tone (DTMF) line is required.

To enter the **FIRST** 11-digit telephone number, scroll through until you reach the feature as shown below.

```
Set 1st 11-digit
Number - Press #
```

Press # to access the feature. The display should appear...

```
(1)   Code: _ _ _ _
_ - _ _ _ - _ _ _ - _ _ _ _      <----up to 11 digits telephone number
```

Enter Dial Code and telephone number. If less than 11 digits are required, simply press # to blank the remaining digit(s). When you make a mistake and wish to re-enter the code, press ***** to enter code again. After entering the telephone number, the display should appear...

```
* = Abort, # = Store
x - x x x - x x x - x x x x
```

Press ***** to abort or # to store entry. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE. To program the second 11-digit number, scroll through until you reach the menu for entering the 2nd 11-digit telephone number and follow the above process.

RING PATTERN SELECT (9501A only)

The system allows the user to adjust the ringing pattern as required. Factory default is set to a distinct ringing pattern. Normal or Standard North American ringing pattern can be selected for applications where ringing pattern is critical; especially for older answering machines that only accept normal ringing pattern.

To change the ringing pattern, scroll through until you reach the feature as shown below.

```
Program ringing
pattern - Press #
```

Press # to access the feature. The display should appear...

```
Distinct/Normal
D=15    N=38   _ _      <---- 38 for North American ringing pattern
```

Enter **15** for Mircom's distinct ringing pattern or **38** for Normal or Standard North American ringing pattern. Enter any number for other desired ringing pattern. After entering the selection, the display should appear...

```
* = Abort, # = Store
D=15    N=38   x x
```

Press ***** to abort or # to store entry. To quit, enter ***000** while at PROGRAM MODE menu to return to NORMAL MODE.

SELECT DIGIT FOR HOLD

To select the digit to put the caller on hold, scroll through until you reach the feature as shown below

```
[1=Bck]       [3=Fwd]
   Do you want to
   Program HOLD?
[*=Abort]     [#=Yes]
```

Press # to select hold digit. The display will be...

```
[1=Bck]       [3=Fwd]
   Hold on digit
   1,2, or 3 (_)
[*=Abort]     [#=Yes]
```

Type in the digit you require and then press #. When finished, the system should exit to PROGRAM MODE menu. To quit, enter *000 while at PROGRAM MODE menu to return to NORMAL MODE.

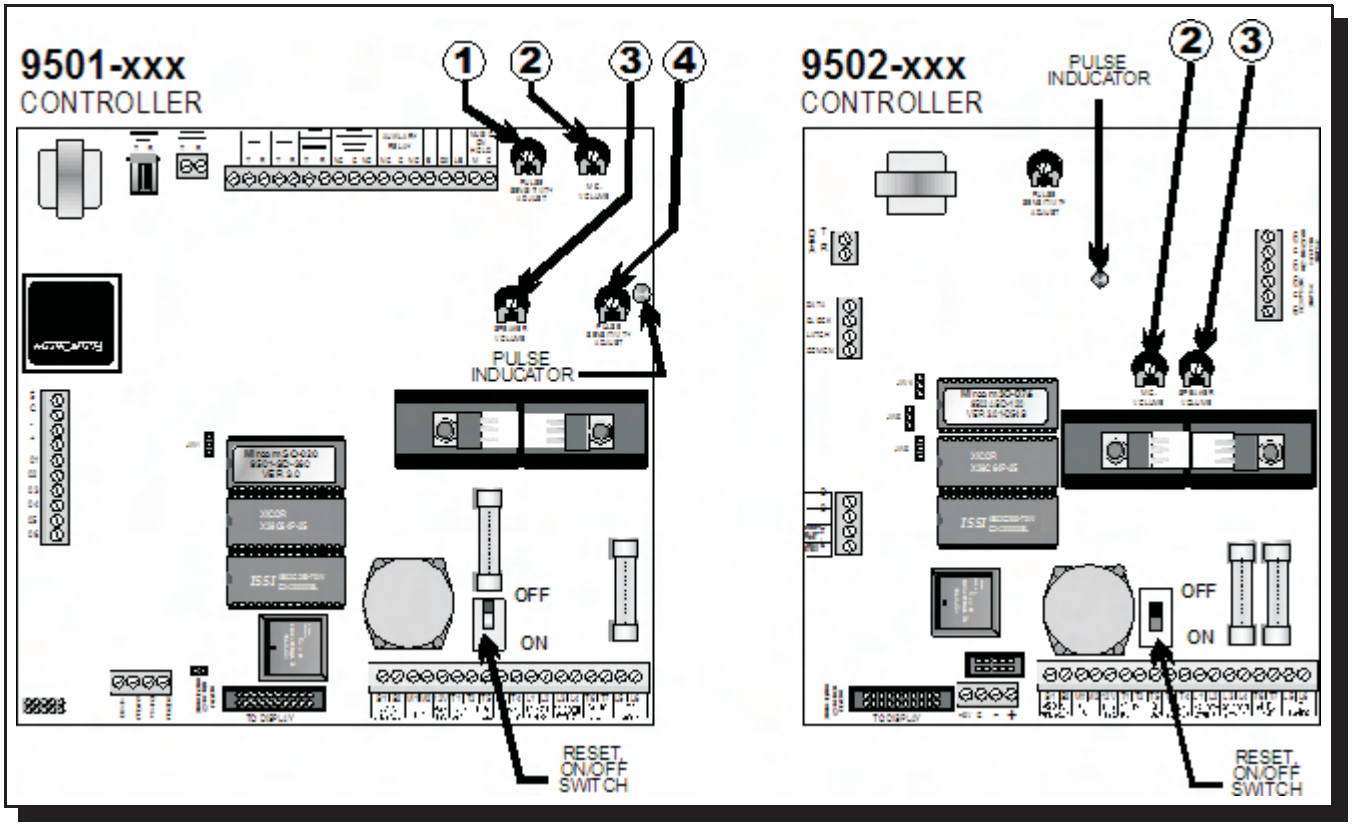
* * * * End of Programming * * * *

SYSTEM ADJUSTMENTS

CONTROL ADJUSTMENTS FOR CONTROLLERS (See FIG. 19)

1. ***MUSIC LEVEL ADJUST*** - Adjust this control to reduce or increase the Music On Hold level. Turn clockwise to increase music level.
2. ***MICROPHONE VOLUME*** - Adjust this control to the occupant's desired listening level. Turn clockwise to increase volume.
3. ***SPEAKER VOLUME*** - Adjust this control to the desired speaker loudness at the Entry Panel. Turn clockwise to increase volume.
4. ***PULSE SENSITIVITY ADJUST*** - Because of the condition of many of the older rotary "PULSE" type telephones in use, there is great variation with the signal they generate to release the door. The control units come factory preset to respond properly with these variations. If trouble is encountered in releasing the door when using a rotary phone, this control may require adjustments as outlined below.
   a) To increase sensitivity, turn the shaft of the control clockwise 1/10 of a revolution, then call the occupant whose phone was previously not energizing the door release. Ask the party to dial "9" and observe if the door release has been energized. Continue rotating the control 1/10 of a revolution at a time until the door release is positively energized.
   b) The control unit uses a crystal controlled electronic bandpass filter for the detection of the digit "9" for Touch Tone type phones. Therefore, no adjustments are required for tone type detection as long as the resident telephone can generate a "Touch-Tone" signal when on-line.

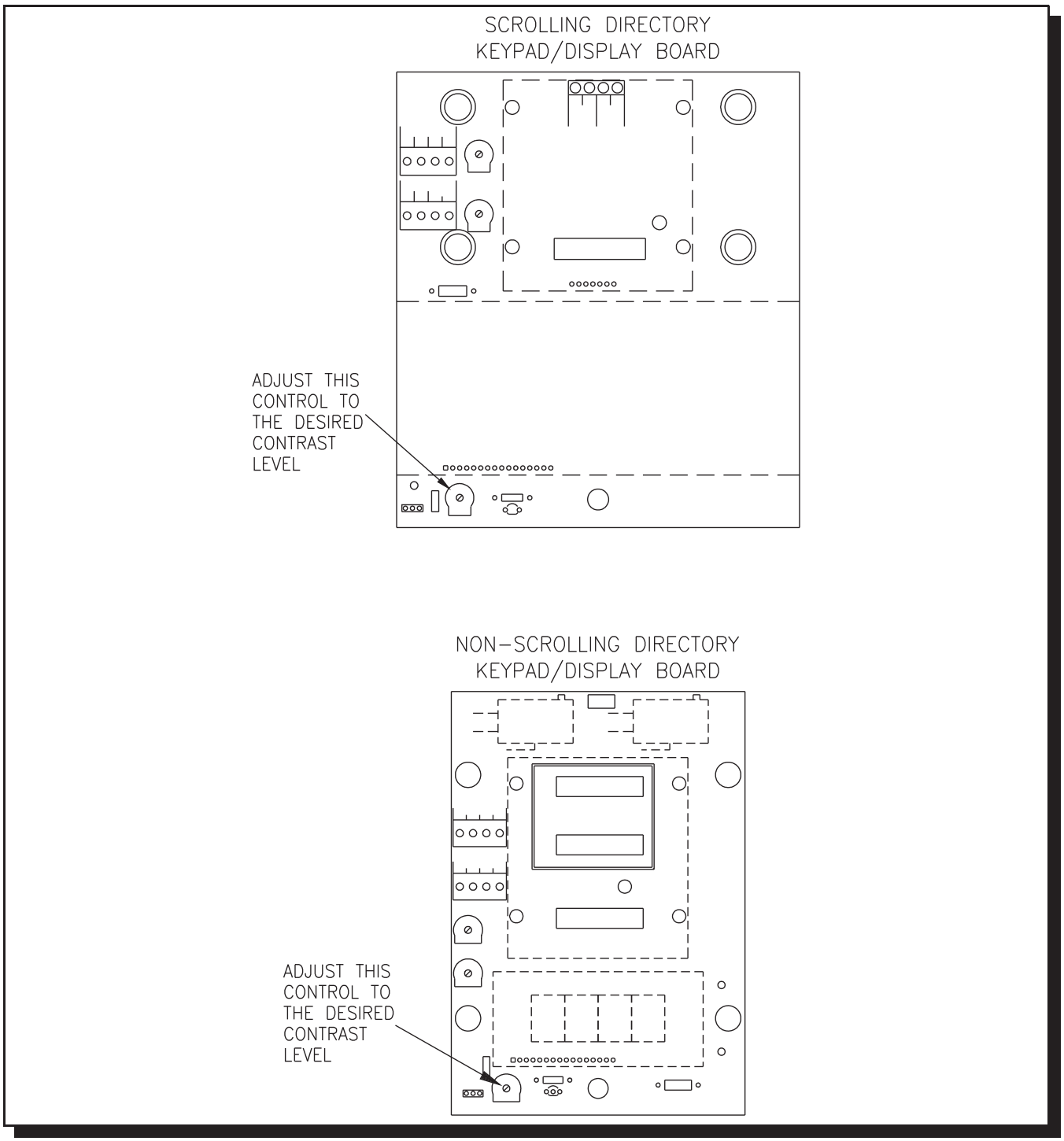
FIG. 19: CONTROL LOCATIONS



DISPLAY CONTRAST ADJUSTMENT

Open the door and adjust the contrast control as shown on FIG. 20, turn clockwise to increase contrast.

FIG. 20: DISPLAY CONTRAST ADJUSTMENT



TROUBLESHOOTING

1. PROBLEM: *NO CHARACTERS DISPLAYED ON DISPLAY*

ACTION: Open the door and locate the contrast control and ribbon cable on the Keypad/Display board. Check the connecting ribbon cable. Push or plug-in into the **J1** socket if necessary. Adjust the contrast using a Phillips screw driver until the characters appear distinct.

2. PROBLEM: *DOOR RELEASE NOT WORKING*

ACTION: Check the door strike fuse and the power supply transformer connections . Please refer to FIG. 18 for fuse location and FIG. 7 for wiring scheme. Check programmed keyless entry code and door-open period.

3. PROBLEM: *DIALLING THE DIGIT "9" DOES NOT RELEASE THE DOOR*

ACTION: Please refer to System Adjustments, Pulse Sensitivity Adjust section for complete information. In some older rotary "PULSE" phone, dialling the digit "0" may solve the problem.

4. PROBLEM: *SYSTEM LATCHED-UP*

ACTION: Reset the system by removing the power and powering it back on again (on newer boards there is a switch to do this, located just above the terminal block, bottom right hand corner of the 9501A and the 9502A). This action should initialize the system to normal mode. No programmed information will be lost since the system uses a non-volatile memory that will hold the information even. Please note: the system must be Earth Grounded properly to avoid latch-up.

5. PROBLEM: *RELAY CARD TEL. LINE NOT RESPONDING*

ACTION: Check the jumper setting on the Relay Cabinet's Decoder/Mother board. Refer to FIG. 6 for complete details. Check the power supply transformer connection and voltage on the terminal block. Check the communication link wiring, refer to FIG. 5 for wiring information. If necessary, repair or replace relay card.

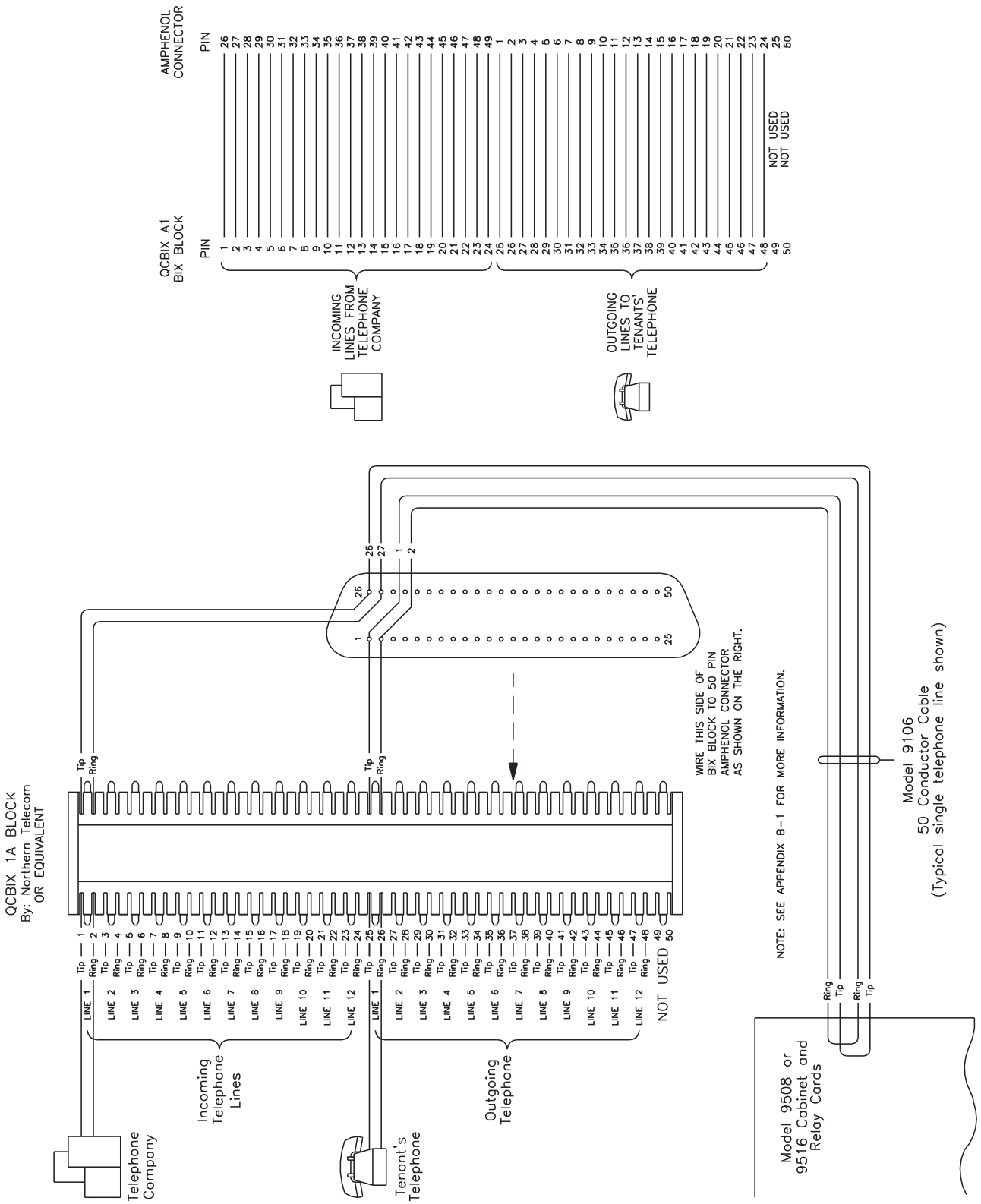
CAUTION!* *Do not unplug or install any cards while the power is "on".

Note: For further help, please call or fax:

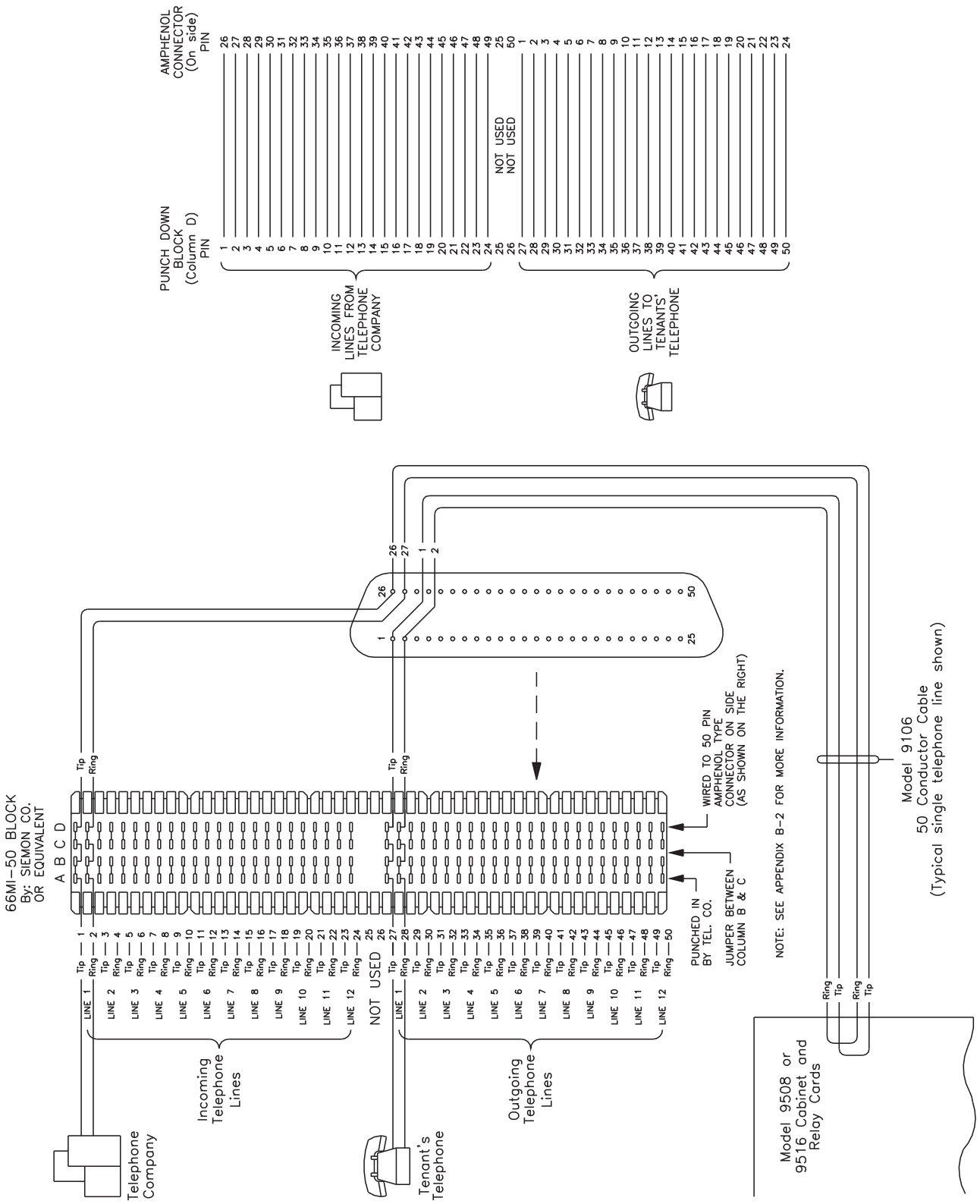
Application Engineering Department

Tel.: (888) 660-4655
Fax: (888) 660-4113

APPENDIX A-1: CA-71A BIX Block Wiring Configuration



APPENDIX A-2: RJ-71C Punch Down Block Wiring Configuration



APPENDIX B-1: CA-71A BIX Block Identification Form

RELAY CABINET No. __ OF __ DECODER/MOTHER BOARD No. __

RELAY CARD/ AMP. JACK #	TELEPHONE NUMBER	BLOCK PINS TEL. CO./RES.	APT. #	DIAL CODE	RELAY/ LINE #	RELAY CARD/ AMP. JACK #	TELEPHONE NUMBER	BLOCK PINS TEL. CO./RES.	APT. #	DIAL CODE	RELAY/ LINE #
1		1,2/25,26			0000	5		1,2/25,26			0048
		3,4/27,28			0001			3,4/27,28			0049
		5,6/29,30			0002			5,6/29,30			0050
		7,8/31,32			0003			7,8/31,32			0051
		9,10/33,34			0004			9,10/33,34			0052
		11,12/35,36			0005			11,12/35,36			0053
		13,14/37,38			0006			13,14/37,38			0054
		15,16/39,40			0007			15,16/39,40			0055
		17,18/41,42			0008			17,18/41,42			0056
		19,20/43,44			0009			19,20/43,44			0057
		21,22/45,46			0010			21,22/45,46			0058
		23,24/47,48			0011			23,24/47,48			0059
2		1,2/25,26			0012	6		1,2/25,26			0060
		3,4/27,28			0013			3,4/27,28			0061
		5,6/29,30			0014			5,6/29,30			0062
		7,8/31,32			0015			7,8/31,32			0063
		9,10/33,34			0016			9,10/33,34			0064
		11,12/35,36			0017			11,12/35,36			0065
		13,14/37,38			0018			13,14/37,38			0066
		15,16/39,40			0019			15,16/39,40			0067
		17,18/41,42			0020			17,18/41,42			0068
		19,20/43,44			0021			19,20/43,44			0069
		21,22/45,46			0022			21,22/45,46			0070
		23,24/47,48			0023			23,24/47,48			0071
3		1,2/25,26			0024	7		1,2/25,26			0072
		3,4/27,28			0025			3,4/27,28			0073
		5,6/29,30			0026			5,6/29,30			0074
		7,8/31,32			0027			7,8/31,32			0075
		9,10/33,34			0028			9,10/33,34			0076
		11,12/35,36			0029			11,12/35,36			0077
		13,14/37,38			0030			13,14/37,38			0078
		15,16/39,40			0031			15,16/39,40			0079
		17,18/41,42			0032			17,18/41,42			0080
		19,20/43,44			0033			19,20/43,44			0081
		21,22/45,46			0034			21,22/45,46			0082
		23,24/47,48			0035			23,24/47,48			0083
4		1,2/25,26			0036	8		1,2/25,26			0084
		3,4/27,28			0037			3,4/27,28			0085
		5,6/29,30			0038			5,6/29,30			0086
		7,8/31,32			0039			7,8/31,32			0087
		9,10/33,34			0040			9,10/33,34			0088
		11,12/35,36			0041			11,12/35,36			0089
		13,14/37,38			0042			13,14/37,38			0090
		15,16/39,40			0043			15,16/39,40			0091
		17,18/41,42			0044			17,18/41,42			0092
		19,20/43,44			0045			19,20/43,44			0093
		21,22/45,46			0046			21,22/45,46			0094
		23,24/47,48			0047			23,24/47,48			0095

APPENDIX B-2: RJ-71C Punch Down Block Identification Form

RELAY CABINET No. __ OF __ DECODER/MOTHER BOARD No. __

RELAY CARD/ AMP. JACK #	TELEPHONE NUMBER	BLOCK PINS TEL. CO./RES.	APT. #	DIAL CODE	RELAY/ LINE #	RELAY CARD/ AMP. JACK #	TELEPHONE NUMBER	BLOCK PINS TEL. CO./RES.	APT. #	DIAL CODE	RELAY/ LINE #
1		1,2/27,28			0000	5		1,2/27,28			0048
		3,4/29,30			0001			3,4/29,30			0049
		5,6/31,32			0002			5,6/31,32			0050
		7,8/33,34			0003			7,8/33,34			0051
		9,10/35,36			0004			9,10/35,36			0052
		11,12/37,38			0005			11,12/37,38			0053
		13,14/39,40			0006			13,14/39,40			0054
		15,16/41,42			0007			15,16/41,42			0055
		17,18/43,44			0008			17,18/43,44			0056
		19,20/45,46			0009			19,20/45,46			0057
		21,22/47,48			0010			21,22/47,48			0058
		23,24/49,50			0011			23,24/49,50			0059
2		1,2/27,28			0012	6		1,2/27,28			0060
		3,4/29,30			0013			3,4/29,30			0061
		5,6/31,32			0014			5,6/31,32			0062
		7,8/33,34			0015			7,8/33,34			0063
		9,10/35,36			0016			9,10/35,36			0064
		11,12/37,38			0017			11,12/37,38			0065
		13,14/39,40			0018			13,14/39,40			0066
		15,16/41,42			0019			15,16/41,42			0067
		17,18/43,44			0020			17,18/43,44			0068
		19,20/45,46			0021			19,20/45,46			0069
		21,22/47,48			0022			21,22/47,48			0070
		23,24/49,50			0023			23,24/49,50			0071
3		1,2/27,28			0024	7		1,2/27,28			0072
		3,4/29,30			0025			3,4/29,30			0073
		5,6/31,32			0026			5,6/31,32			0074
		7,8/33,34			0027			7,8/33,34			0075
		9,10/35,36			0028			9,10/35,36			0076
		11,12/37,38			0029			11,12/37,38			0077
		13,14/39,40			0030			13,14/39,40			0078
		15,16/41,42			0031			15,16/41,42			0079
		17,18/43,44			0032			17,18/43,44			0080
		19,20/45,46			0033			19,20/45,46			0081
		21,22/47,48			0034			21,22/47,48			0082
		23,24/49,50			0035			23,24/49,50			0083
4		1,2/27,28			0036	8		1,2/27,28			0084
		3,4/29,30			0037			3,4/29,30			0085
		5,6/31,32			0038			5,6/31,32			0086
		7,8/33,34			0039			7,8/33,34			0087
		9,10/35,36			0040			9,10/35,36			0088
		11,12/37,38			0041			11,12/37,38			0089
		13,14/39,40			0042			13,14/39,40			0090
		15,16/41,42			0043			15,16/41,42			0091
		17,18/43,44			0044			17,18/43,44			0092
		19,20/45,46			0045			19,20/45,46			0093
		21,22/47,48			0046			21,22/47,48			0094
		23,24/49,50			0047			23,24/49,50			0095

APPENDIX C: ACCESSORY SPECIFICATIONS

DOOR STRIKES

Model: M-10

VOLTAGE:	4-6V DC (silent), 8-16V AC (buzzing)
DIMENSION:	1 1/4" Wide by 5 7/8" High by 1 1/2" Deep
WEIGHT:	0.736 lb

Model: M-10HD

VOLTAGE:	8-16V AC (buzzing)
DIMENSION:	1 1/4" Wide by 5 7/8" High by 1 1/2" Deep
WEIGHT:	0.706 lb

Model: M-20

VOLTAGE:	4-6V DC (silent), 8-16V AC (buzzing)
DIMENSION:	1 3/4" Wide by 5 7/8" High by 1 1/2" Deep
WEIGHT:	0.986 lb

APPENDIX D-1: DIRECTORY WORKSHEET

APT. #	RESIDENT NAME	KEYLESS ENTRY CODE	DIAL CODE	RELAY / LINE NUMBER	TEL. CO. AMPHENOL JACK #
				0000	1
				0001	
				0002	
				0003	
				0004	
				0005	
				0006	
				0007	
				0008	
				0009	
				0010	
				0011	
				0012	2
				0013	
				0014	
				0015	
				0016	
				0017	
				0018	
				0019	
				0020	
				0021	
				0022	
				0023	

APPENDIX D-2: DIRECTORY WORKSHEET

APT. #	RESIDENT NAME	KEYLESS ENTRY CODE	DIAL CODE	RELAY / LINE NUMBER	TEL. CO. AMPHENOL JACK #

APPENDIX E: CHARACTER SET TABLE *FOR SCROLLING DIRECTORY*

While at Resident Name Entry mode, scroll through the character set by pressing "**1**" to move backward or "**3**" to move forward.

ex. while at 7, press "**1**" to go backward to 6.
ex. while at c, press "**3**" to go forward to d.

Space	**0**	**1**	**2**	**3**	**4**	**5**	**6**
7	**8**	**9**	**A**	**B**	**C**	**D**	**E**
F	**G**	**H**	**I**	**J**	**K**	**L**	**M**
N	**O**	**P**	**Q**	**R**	**S**	**T**	**U**
V	**W**	**X**	**Y**	**Z**	**a**	**b**	**c**
d	**e**	**f**	**g**	**h**	**i**	**j**	**k**
l	**m**	**n**	**o**	**p**	**q**	**r**	**s**
t	**u**	**v**	**w**	**x**	**y**	**z**	

MIRCOM TELEPHONE ENTRY SYSTEM

RESIDENT OPERATING INSTRUCTIONS

Mircom's state-of-the-art door entry system has been installed in this building to provide you and your guest with an increased level of confidence and security.

The system operates with your existing telephone. Your guest simply dials your code number or selects your name by scrolling through the electronic directory on the lobby panel and your telephone will ring. When answered, you will be in communication with your guest.

To unlock the main door, dial the digit " 9 " from your telephone.
To refuse entry, simply hang up.

CALL WAITING FEATURE

While engaged in a conversation with an outside line, a distinct tone will be heard when a visitor places a call from the lobby panel. Flash the hook switch to answer the call. This action will automatically put the outside line "on hold". While on-line, you can open the main door by dialling the digit " 9 " or to refuse entry simply flash the hook switch or dial digit " 4 ". Both actions will automatically reconnect you to the previously "on hold" caller to continue your conversation.

In a similar manner, you can answer your outside caller while talking to the guest in the lobby. Please note that you cannot put your guest "on hold" due to a system allowable talk-time limit (normally 60 seconds).

Warranty & Warning Information

Warning Please Read Carefully

Note to End Users: This equipment is subject to terms and conditions of sale as follows:

Note to Installers

This warning contains vital information. As the only individual in contact with system users, it is your responsibility to bring each item in this warning to the attention of the users of this system. Failure to properly inform system end-users of the circumstances in which the system might fail may result in over-reliance upon the system. As a result, it is imperative that you properly inform each customer for whom you install the system of the possible forms of failure.

System Failures

This system has been carefully designed to be as effective as possible. There are circumstances, such as fire or other types of emergencies where it may not provide protection. Alarm systems of any type may be compromised deliberately or may fail to operate as expected for a variety of reasons. Some reasons for system failure include:

- *Inadequate Installation*

A Fire Alarm system must be installed in accordance with all the applicable codes and standards in order to provide adequate protection. An inspection and approval of the initial installation, or, after any changes to the system, must be conducted by the Local Authority Having Jurisdiction. Such inspections ensure installation has been carried out properly.

- *Power Failure*

Control units, smoke detectors and many other connected devices require an adequate power supply for proper operation. If the system or any device connected to the system operates from batteries, it is possible for the batteries to fail. Even if the batteries have not failed, they must be fully charged, in good condition and installed correctly. If a device operates only by AC power, any interruption, however brief, will render that device inoperative while it does not have power. Power interruptions of any length are often accompanied by voltage fluctuations which may damage electronic equipment such as a fire alarm system. After a power interruption has occurred, immediately conduct a complete system test to ensure that the system operates as intended.

- *Failure of Replaceable Batteries*

Systems with wireless transmitters have been designed to provide several years of battery life under normal conditions. The expected battery life is a function of the device environment, usage and type. Ambient conditions such as high humidity, high or low temperatures, or large temperature fluctuations may reduce the expected battery life. While each transmitting device has a low battery monitor which identifies when the batteries need to be replaced, this monitor may fail to operate as expected. Regular testing and maintenance will keep the system in good operating condition.

- *Compromise of Radio Frequency (Wireless) Devices*

Signals may not reach the receiver under all circumstances which could include metal objects placed on or near the radio path or deliberate jamming or other inadvertent radio signal interference.

- *System Users*

A user may not be able to operate a panic or emergency switch possibly due to permanent or temporary physical disability, inability to reach the device in time, or unfamiliarity with the correct operation. It is important that all system users be trained in the correct operation of the alarm system and that they know how to respond when the system indicates an alarm.

- *Automatic Alarm Initiating Devices*

Smoke detectors, heat detectors and other alarm initiating devices that are a part of this system may not properly detect a fire condition or signal the control panel to alert occupants of a fire condition for a number of reasons, such as: the smoke detectors or heat detector may have been improperly installed or positioned; smoke or heat may not be able to reach the alarm initiating device, such as when the fire is in a chimney, walls or roofs, or on the other side of closed doors; and, smoke and heat detectors may not detect smoke or heat from fires on another level of the residence or building.

- *Software*

Most Mircom products contain software. With respect to those products, Mircom does not warranty that the operation of the software will be uninterrupted or error-free or that the software will meet any other standard of performance, or that the functions or performance of the software will meet the user's requirements. Mircom shall not be liable for any delays, breakdowns, interruptions, loss, destruction, alteration or other problems in the use of a product arising our of, or caused by, the software.

Every fire is different in the amount and rate at which smoke and heat are generated. Smoke detectors cannot sense all types of fires equally well. Smoke detectors may not provide timely warning of fires caused by carelessness or safety hazards such as smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches or arson.

Even if the smoke detector or heat detector operates as intended, there may be circumstances when there is insufficient warning to allow all occupants to escape in time to avoid injury or death.

- *Alarm Notification Appliances*

Alarm Notification Appliances such as sirens, bells, horns, or strobes may not warn people or waken someone sleeping if there is an intervening wall or door. If notification appliances are located on a different level of the residence or premise, then it is less likely that the occupants will be alerted or awakened. Audible notification appliances may be interfered with by other noise sources such as stereos, radios, televisions, air conditioners or other appliances, or passing traffic. Audible notification appliances, however loud, may not be heard by a hearing-impaired person.

- *Telephone Lines*

If telephone lines are used to transmit alarms, they may be out of service or busy for certain periods of time. Also the telephone lines may be compromised by such things as criminal tampering, local construction, storms or earthquakes.

- *Insufficient Time*

There may be circumstances when the system will operate as intended, yet the occupants will not be protected from the emergency due to their inability to respond to the warnings in a timely manner. If the system is monitored, the response may not occur in time enough to protect the occupants or their belongings.

- *Component Failure*

Although every effort has been made to make this system as reliable as possible, the system may fail to function as intended due to the failure of a component.

- *Inadequate Testing*

Most problems that would prevent an alarm system from operating as intended can be discovered by regular testing and maintenance. The complete system should be tested as required by national standards and the Local Authority Having Jurisdiction and immediately after a fire, storm, earthquake, accident, or any kind of construction activity inside or outside the premises. The testing should include all sensing devices, keypads, consoles, alarm indicating devices and any other operational devices that are part of the system.

- *Security and Insurance*

Regardless of its capabilities, an alarm system is not a substitute for property or life insurance. An alarm system also is not a substitute for property owners, renters, or other occupants to act prudently to prevent or minimize the harmful effects of an emergency situation.

IMPORTANT NOTE: End-users of the system must take care to ensure that the system, batteries, telephone lines, etc. are tested and examined on a regular basis to ensure the minimization of system failure.

Limited Warranty

Mircom Technologies Ltd. warrants the original purchaser that for a period of two years from the date of manufacture, the product shall be free of defects in materials and workmanship under normal use. During the warranty period, Mircom Technologies Ltd. shall, at its option, repair or replace any defective product upon return of the product to its factory, at no charge for labor and materials. Any replacement and/or repaired parts are warranted for the remainder of the original warranty or ninety (90) days, whichever is longer. The original owner must promptly notify Mircom Technologies Ltd. in writing that there is defect in material or workmanship, such written notice to be received in all events prior to expiration of the warranty period.

International Warranty

The warranty for international customers is the same as for any customer within Canada and the United States, with the exception that Mircom Technologies Ltd. shall not be responsible for any customs fees, taxes, or VAT that may be due.

Conditions to Void Warranty

This warranty applies only to defects in parts and workmanship relating to normal use. It does not cover:

- damage incurred in shipping or handling;
- damage caused by disaster such as fire, flood, wind, earthquake or lightning;
- damage due to causes beyond the control of Mircom Technologies Ltd. such as excessive voltage, mechanical shock or
- water damage;
- damage caused by unauthorized attachment, alterations, modifications or foreign objects;
- damage caused by peripherals (unless such peripherals were supplied by Mircom Technologies Ltd.);
- defects caused by failure to provide a suitable installation environment for the products;
- damage caused by use of the products for purposes other than those for which it was designed;
- damage from improper maintenance;
- damage arising out of any other abuse, mishandling or improper application of the products.

Warranty Procedure

To obtain service under this warranty, please return the item(s) in question to the point of purchase. All authorized distributors and dealers have a warranty program. Anyone returning goods to Mircom Technologies Ltd. must first obtain an authorization number. Mircom Technologies Ltd. will not accept any shipment whatsoever for which prior authorization has not been obtained. NOTE: Unless specific pre-authorization in writing is obtained from Mircom management, no credits will be issued for custom fabricated products or parts or for complete fire alarm system. Mircom will at its sole option, repair or replace parts under warranty. Advance replacements for such items must be purchased.

Note: Mircom Technologies Ltd.'s liability for failure to repair the product under this warranty after a reasonable number of attempts will be limited to a replacement of the product, as the exclusive remedy for breach of warranty.

Disclaimer of Warranties

This warranty contains the entire warranty and shall be in lieu of any and all other warranties, whether expressed or implied (including all implied warranties of merchantability or fitness for a particular purpose) And of all other obligations or liabilities on the part of Mircom Technologies Ltd. neither assumes nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product.

This disclaimer of warranties and limited warranty are governed by the laws of the province of Ontario, Canada.

Out of Warranty Repairs

Mircom Technologies Ltd. will at its option repair or replace out-of-warranty products which are returned to its factory according to the following conditions. Anyone returning goods to Mircom Technologies Ltd. must first obtain an authorization number. Mircom Technologies Ltd. will not accept any shipment whatsoever for which prior authorization has not been obtained.

Products which Mircom Technologies Ltd. determines to be repairable will be repaired and returned. A set fee which Mircom Technologies Ltd. has predetermined and which may be revised from time to time, will be charged for each unit repaired.

Products which Mircom Technologies Ltd. determines not to be repairable will be replaced by the nearest equivalent product available at that time. The current market price of the replacement product will be charged for each replacement unit.

WARNING: Mircom Technologies Ltd. recommends that the entire system be completely tested on a regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.

NOTE: Under no circumstances shall Mircom Technologies Ltd. be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability, or any other legal theory. Such damages include, but are not limited to, loss of profits, loss of the product or any associated equipment, cost of capital, cost of substitute or replacement equipment, facilities or services, down time, purchaser's time, the claims of third parties, including customers, and injury to property.

MIRCOM MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS GOODS DELIVERED, NOR IS THERE ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, EXCEPT FOR THE WARRANTY CONTAINED HEREIN.

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